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ARTICLE XXV.

ON THE FUNCTION OF THE MINUTE ARTERIES.

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I desire, in the present article, to draw attention to certain facts and views, and some of the consequences to which they seem to lead; which, if they are not new, are not practically recognized as having the importance they seem to me to have.

The points may be briefly stated in the form of propositions, each of which will be in some measure discussed, and, subsequently, their practical consequences considered. They are as follows:—

I. The small arteries or arterioles, previous to their termination in the capillaries, are purely muscular in their middle coat—*contractile* and not *elastic*, as the large arteries are.

II. These small arteries are supplied by, and are as truly under the control of, the organic nervous system as, for example, the esophagus is or small intestines, etc.

III. That it is the special office of these muscular vessels to impart a new momentum to the blood necessary to circulate it through the capillary system, as truly as it is the office of the heart to impart the initial movement to the blood, or of the ejaculatory ducts, esophagus, small intestines, and the like to circulate their contents.

1. That the arteries, even of the larger kind, are provided with muscular tissue in their middle coat, is well known and easily demonstrated. That the muscular tissue comparatively increases, as we proceed towards the distal end of the arteries, is a well-known fact. That it is of the unstriped or involuntary kind is also well known; and, that while the larger arteries have the thick middle coat, mainly constituted of fibrous tissue, largely of the elastic kind, with some unstriped muscular tissue imperfectly developed, and, therefore, probably imperfectly contractile, that, on the other hand, the smaller and finer arteries, previous to their termination in the capillaries, have the elastic tissue found in the middle coat elsewhere, *entirely* replaced by muscular tissue of the involuntary kind, while the capillaries are entirely devoid of either fibrous or muscular tissues, and present only a thin, almost structureless wall, apparently just sufficient to separate the blood within from the tissue without the vessel. These facts have been abundantly demonstrated by direct evidence. But they can also, in quite an interesting manner, be established by indirect evidence which I deem it needless to introduce, more especially, since some of it will be introduced in another part of this paper, for a somewhat different purpose.

There can be no doubt then, as to the muscularity of the middle coat of the small arteries, neither can there be any doubt as to the elasticity of the larger arteries. Considering, for sake of convenience, the arterial tubes as one tube throughout their course, we have a vessel terminated at either end by a muscular structure—at one end the heart, at the other the *distal* end of the artery, the muscular structure already referred to, both contractile; while the intervening tube, may, practically speaking, be called *elastic* and *not* contractile. The heart is richly supplied with nerves from the system of organic life, and even has a large number of ganglia imbedded in its structure. In turning to the small muscular arteries, to ascertain if *they* are also supplied with the nerves of organic life, we are brought to our second proposition.

2. That the power and influence of the organic nervous sys-

tem in the various processes of organic life, as we witness them in *animal* life, has not been sufficiently attended to, I have no doubt. That it constitutes, taken altogether, the fountain, or centre, or source, so to speak, of the excitant energy or force, rythmically or constantly dispensed to the various parts of the organism, concerned in executing the organic process on which the continuance of life depends, does not seem to have been sufficiently considered in all its relations, generally speaking. That the various organs, as, for example, the esophagus, the stomach, the small and large intestines, execute their movements through the agency of the involuntary muscular tissue with which they abound, and that this muscular tissue is normally made to contract by a direct stimulating influence or power conveyed to it, for which it directly depends on this organic nervous system, is *also* well understood. It is well known that all the normally involuntary movements of the body, with, perhaps, some rare exceptions, are executed by this unstriped muscular tissue, excited to action by or through the organic nervous system, as in the examples already given.

Now, since it is a well-established fact, that the small arteries are purely muscular, to the extent already shown, and since this muscular tissue has been shown to be of the involuntary kind, let us see if these small arteries are also supplied with organic nerves, as other parts are from which they materially differ only in size, and whether it can be shown that these small vessels are excited and controlled as other parts are, by the sympathetic nervous system.

When we consider how thickly woven plexuses occur on most all the arteries, as on most of the larger arteries in the cranial cavity, and as, almost without exception, the arteries given off from the aorta within the thoracic, abdominal and pelvic cavities have; and the fact so often demonstrated, that branches or twigs from this nervous system do actually ramify on the small arteries, at least in some parts of the body, it would seem not to require more than a simple reference to the fact. But it is important, as we will see, that this fact, if it be such, should be fully admitted.

If these vessels are muscular, it would not be unreasonable to expect, *a priori*, they are supplied with nerves, as we know the same kind of muscular tissue elsewhere to be, and we have just seen it can be shown that such is the fact, at least, in many parts of the body. Suppose, then, we admit these muscular vessels *are* thus supplied from the organic nervous system.

This being admitted, it seems scarcely possible to avoid the conclusion that these structures are related here, for the same purpose they are related elsewhere, for, *viz.*:—These nerves are here for the purpose, in part at least, of conveying to this muscular tissue the excitant influence which is the direct cause of its action or contraction. The *inference*, I say, seems almost unavoidable, that such *is* the relation. Now, while it is somewhat difficult to offer direct proof that this is true, yet we are not wholly destitute of such proof. Among others, I will mention one experiment, well known, which seems to me, when attentively considered, to be sufficient to show that these muscular vessels are under the control of this nervous system.

If the sympathetic nerve be divided high up in the neck, on one side, in a rabbit for example, immediately after, we have visible expansion of the small arteries and capillaries, etc., of the conjunctiva and ear of that side and, doubtless, in other parts, as a result. [BERNARD.] The vessels which have suffered the most remarkable expansion in this case, are the small muscular arteries.

Now, in this case, it seems to me, the only way we can explain the appearances, is to suppose we have done for the muscular structure of the affected vessels what we do for a voluntary muscle, by dividing the nerve which leads to it, it is paralyzed, ceases to contract, relaxes, ceases, in great measure, to resist the expansive pressure of the blood, and does what we would *expect* it to do, *dilates*.

This experiment seems to *me* to show, that what is known to be true, *e.g.*, of the esophagus, from which the vessel differs essentially only in size, is *also* true of these muscular tubes or vessels—that, normally, they *do* contract under an influence derived from the organic nervous system—and, that when, for

any reason, this excitant influence is withdrawn, they cease to contract, as we would expect from analogy. Indeed, we cannot deny this, without creating the necessity of explaining why we have this relation between contractile and nervous tissues in *one* case, without the consequences universally observed elsewhere. Then let us admit the second proposition, at least as probable, *viz.*:—That these small arteries are supplied by, and are as truly under the control of, the organic nervous system as the esophagus is, or small intestines, etc.

3. In order to prepare the way for fairly considering the third proposition, let us begin by recalling, that it is the office of the heart to communicate the initial impulse to the blood. The force exerted by the heart is expended in two ways:—1st. In setting the blood in motion. 2d. In opposing the elasticity of the arteries, by which latter the force so expended is *conserved*. The arteries, by the means just referred to, are normally maintained in a state of tension. The force conserved by the artery, by virtue of its elasticity, is expanded in reacting on the contained column of blood, especially in the interval between one ventricular contraction and the next which succeeds it. The blood, being unable to return toward the heart, is steadily forced onward, toward the distal end of the artery, with the exception of the rythmical impulse communicated by the heart, which impulse is felt to the remote extremity of the artery, and to which, in all probability, the pulse is due.

Now, it becomes a question, whether, by reason of friction and other causes, the momentum of the blood is not so much diminished as to make it difficult, if not impossible, to circulate it through the exceedingly small, tortuous capillary passages, unless some means exist for communicating a new impulse to the blood which has just entered, or is about to enter, the capillaries. It certainly is not unreasonable to expect such a means. Now, if the muscular arrangement which we have seen, does actually exist at the distal end of the arteries, and which is provided with a nervous apparatus, is not for some such purpose as this, the question, as to what *is* its use, seems to me unanswerable.

1st. *Analogical Evidence.*—I have before remarked, that these vessels do not differ essentially from some other organs, the action of which is well understood, only in size. You have a tube with unstriped muscular walls, supplied in both cases by the organic nervous system.

Now, we know very well how the esophagus, for example, during the act of swallowing, we will say, of water, is made to propel it in a certain direction, and even against considerable resistance, as that of gravity, or how its action may be reversed, as in eructations and vomiting. I say, that, in this case, a fluid is propelled along a straight tube with considerable force, by its rythmical contraction being rythmically supplied with its contents, as the esophagus is in the successive acts of deglutition. Concerning this, there can be no doubt. In the case of the artery with muscular walls, we have exactly the same conditions—a fluid transmitted through the tube, rythmically in accordance with the heart's action. The question now is, whether the fluid (the blood) passed into the *latter* vessel with an impulse, will, as in the other case, excite contraction. I confess that I cannot see but that it will; and if we deny that it does, we are confronted by the impossible task, as it seems to me, of explaining *why* it does not in the one case, when it *does* take place in the other.

Evidence of the same kind, from the stomach, the intestines, the ejaculatory ducts, and from other members of the animal kingdom, might be given, if I had the time or deemed it necessary.

2d. *Direct Evidence.*—But we are not confined to such evidence as that just adduced. There is positive evidence to show that the vessels under consideration will contract like other muscular organs, under the influence of stimuli. If the mesentery of a frog is drawn out and placed under the microscope, and a galvanic current be transmitted through one of these small muscular vessels, it will immediately contract, until its size is *very* much diminished. But, if the current be too powerful, or too long continued, the vessel ceases to respond to the stimulus, and not only returns to its normal size, but becomes

much enlarged, presenting an aneurismal bulging at the place supposed, becoming much more visible than before. [WEBER.]

The same phenomena may be observed, still better, in the bat's wing. In *this* case, under strong stimulation, these muscular vessels become so much reduced in size as to appear almost obliterated. If too powerfully or too long stimulated, the vessels lose their susceptibility to the stimulant, and relax until they finally attain, in some instances, many times their natural size. [PAGET.]

No better evidence of the kind could be required, to show that these are susceptible and do contract, on the one hand, or that they may be paralyzed, on the other. The question once again recurs now—If it is not the office of these vessels to to propel the blood, what *is* their office? Under like circumstances, we see other organs propelling fluids, why not the same happen here?

To change the view a little. It is perfectly reasonable to suppose when a vessel is suddenly diminished in calibre, it will, for this reason, obstruct the flow of blood through it, and that, as a consequence, the fluid will accumulate behind the point of constriction. It is also perfectly reasonable to suppose that if, for any cause, the vessel should *cease* to contract, either because it had lost the power, or because the excitant influence had been withdrawn, no matter which way now, it should become distended with its proper contents as it relaxed, in fact, that there should be an accumulation of the contents of the vessel at such place. Such phenomena as those I have just mentioned, have been actually observed innumerable times, but especially the last mentioned; and I have to add, in this case, that the blood *is invariably retarded in its movement, or even arrested*. One cannot, it seems to me, witness such phenomena and not be inclined to the view, that the vessels referred to really have as their distinct office that of propelling the blood which enters them, onward, toward, or through the passive, tortuous capillaries.

But, again, there is a class of animals destitute of a heart proper; but in which, nevertheless, the blood is propelled ex-

clusively, as it seems, by vessels similar to those we are now considering—vessels possessed of muscular walls, which consideration will show how powerful and efficient, in the circulation of the blood, simple vessels may become. If similar vessels in the *one* case can *circulate* the blood, it is not unreasonable to suppose in the *other* case, they can *help* to do it. The circulation called the portal—the circulation of the blood *from* the placenta to the child—and many other examples might be given, to show how efficient simple vessels may be in the circulation of the blood.

But, while the evidence is not so complete as could be desired, which has been presented, it is, nevertheless, sufficiently so to show that, in all probability, it is one of the principal offices of these muscular vessels, supplied and controlled by the organic nervous system, to impart a new momentum to, or circulate, or assist in circulating, the blood through the capillary passages.

Within the limits of this paper, only a small portion of the evidence can be introduced and discussed, which might be, on which these propositions rest. But enough, it seems to me, *has* been introduced to give the only one of the propositions, concerning which there could arise much doubt, a high degree of probability. I am now engaged, as my occupations will permit, in an experimental investigation of this subject, more particularly in reference to inflammation, and, so far as I may now conclude from my own observations, the above propositions express the truth. Admitting, then, the propositions as probable, I now desire to consider a few of the most prominent objections, which may be or have been made to these views. They are directed mainly against the third proposition. The first two can be supported on positive evidence; the third is, in great measure, a matter of inference.

OBJECTIONS.

I. The objection which would seem to have the most force, is, that after carefully examining these small muscular vessels under the microscope, one cannot perceive such a rythmical action as has been supposed. At first sight, it would seem that if such a contraction occurred it could easily be seen. But

this is by no means so certain as one would think. Let any one lay bare the heart of an animal while in action, and undertake to say, from looking at it, what its peculiar action is. It is notorious, that competent observers have come to opposite conclusions as to the heart's action, in many respects, for example, as to whether the heart lengthens when it contracts.

Let anyone lay bare a small artery and watch it, and if they can determine it moves at all, they will find it impossible to determine what the real *character* of the movement is. The movement is not only so slight, but occurs with such quickness the eye cannot certainly follow it, and this is especially true of these minute muscular arteries, in which the movements are somewhat different from what they are in the larger elastic arteries, where we have a distinct pulse. I maintain that the movement must take place much more slowly than it does, and, at the same time, the eye be very accurate and quick if it detect it at all certainly. To my mind, this is no sufficient reason for denying the action of these vessels, as claimed. It certainly cannot be objected, they do not have the capacity for action, and that the circumstances make it unreasonable for us to expect it.

II. But it has been objected, that fluids circulate in plants, and can be raised in capillary tubes, a short distance, without the aid of contractile vessels.

As regards the circulation in plants, it is to be remarked there are numerous differences, when compared with the circulation of animals, to be considered.

The circulation is very slow in plants, when compared with that in animals, and, moreover, plants have tubes with firm, unyielding walls, able to resist atmospheric and other pressure, and are supported by a firm, woody texture, making the circumstances quite different from what we have in animals, in which the vessels are comparatively loose and flaccid, and either elastic or contractile, for most part, and ramify in soft, yielding structures; and as regards the capillaries, they are tortuous, have exceeding fineness, and really oppose *physical* resistance to the circulation of the blood through them. I do not

consider the cases as sufficiently parallel to give the argument much force, that, because fluids circulate through plants, apparently without requiring contractile vessels, that the same must therefore necessarily be true of animals. Certainly, the two cases are, in many important respects, so different, as to destroy, in great measure, their parallelism. Then I can see no objection to admitting more than one way of circulating fluids, if the facts require us to, as indeed I think they do. Certainly, such would be more rational than many of the explanations are, which have been offered, of the circulation. But, after all, I am far from denying that the means, whatsoever they may be, by which fluids are circulated in plants, may not also *assist* in the circulation of the blood and fluids in animals.

III. But another explanation has been given of the circulation of the blood through the capillaries, and which *has* even been supposed sufficient to account for the *entire* circulation. It is said, there is an *affinity* between the blood and the tissues, by which the blood is *drawn* or *attracted into* the capillaries. That there is some affinity between the blood and tissues, there can be no question. But when we come to consider whether this affinity is concerned in circulating the blood, we come to quite a different question. Now, I believe this affinity has but little, if anything, *to do* in the circulation of the blood. Nay, I would sooner think it would *embarass* the circulation, than that it aided it. This affinity is, I believe, admitted to be exerted in the capillaries. I understand it to be an *attraction* between the tissue without and the blood within the capillary. I also understand this affinity to be of that intimate kind *only* exerted between contiguous particles, and *not* between particles remote from each other. And, so far as I have any notion of this affinity at all, I understand it to be a force by which contiguous particles are determined or attracted toward each other, modified in some obscure way by the life forces. I do not understand this force to be exerted, as already said, only between contiguous particles, and when it *is* exerted that the *effect* on the *moving* particles (say in the blood) is to *detain* them, rather than drive them forward to make way for their

successors. I confess my entire inability to imagine how this power shall act, either on the blood which is subject to it, so as to propel it onward, or on the remote blood advancing from the heart, so as to *attract* or *draw* it into the tissues, without postulating forces or capacities which have only the merest hypothetical existence, and without involving myself in difficulties which are, to say the very least, inextricable and incomprehensible. It is bad enough, when we come to explain the normal circulation, but the difficulties are immeasurably increased, when we come to explain the abnormities of the circulation, as in congestions, inflammations, and the like.

I cannot, within the limits of this article, do more than allude to this objection, to fully analyze which, and to expose its futility, would require of itself a separate article. I am as far as any one from insisting on a physical explanation, only where such an one harmonizes so fully with, and seems to be so imperatively demanded by, the facts.

While I, of course, admit the existence of this affinity, I deny that it has any considerable share in the circulation of the blood, if, indeed, it has any. Other objections *have* been made, or might be, but they seem to me to be destitute of any considerable force. So far, then, as the objections go, they leave our third proposition with, at least, the same degree of probability attaching to it that the evidence gave it.

To sum up, we seem to have reached, with more or less certainty, the following conclusions:—

1. The small arteries are purely muscular in their middle coat.

2. They are supplied by organic nerves.

3. They are under the control of these nerves, and one of the indispensable conditions of the action of these muscular vessels is, that they receive the excitant influence it is one office of these nerves to convey to them.

4. It is the office of these vessels to assist in the circulation of the blood through the capillaries, in performing which, they are probably the principal agents. They do this as other organs analogous to them circulate fluids, examples of which have been given.

While the blood may be conveyed to the small vessels and capillaries by the agency of the heart and *elastic* arteries, there is reason to believe the blood would either be imperfectly, or not at all, circulated through the capillaries into the veins, were it not for this muscular apparatus, by which the blood receives a new momentum,* necessary, and sufficient to circulate it through the capillaries, in spite of the difficulties interposed by the latter.

PRACTICAL APPLICATION.

It will only render more probable the truth of the above conclusions, if practical application can be made of them in actual pathological states. I propose, briefly, to make one such application here. One of my chief reasons for presenting this article was, that the application of such views seemed to me to throw new light on the pathology of cholera, which we are constantly expecting in the United States. I had, however, long since began the examination of this subject, in reference to inflammation.

Now let us see if, by keeping these conclusions in view, we can get at a more rational view of the pathology of cholera than has commonly prevailed. And surely, in so fearful a disease as this, concerning which so little is truly known, no serious attempt to throw even a feeble light on its nature should be disregarded.

Admitting, then, that the office of these small muscular arteries is as has been stated, and that one indispensable condition of their action is, that they shall receive rythmically from the organic nervous system the excitant influence on which their action directly depends—I say, *admitting* this—we are in position to see if any agent whatsoever shall so act on the nervous system as to diminish (we will say) its energy, that in proportion as these vessels depend on it in the way indicated, in exactly that proportion will they be affected, or fail of performing their proper office; and, just so far as the circulation depends on these vessels, just so far will it be affected or fail. If, for any reason, the stimulating influence of the organic nervous system should be withdrawn or destroyed, entirely or partially, death will

immediately follow, in the one case, or, in the other, more or less marked depression of all the organic functions will follow, which depend on the integrity of the organic nervous system and a constant supply of blood. This will be attested, of course, by prostration, coldness of the surface and body generally, from failure of the "chemico vital" processes on which the production of heat depends—feeble pulse, feeble action of the heart, deficient capillary circulation and the like, but especially the latter.

Now, I must say, admitting the views above insisted on, and supposing (as I think we reasonably may) a cause which shall act as I have indicated, the consequences related are logically deducible. I will now state, briefly, what I believe to be the history of a marked case of cholera, that it may be compared with the views and general statements just made:—

1. I believe cholera to depend on a specific epidemic cause, probably unknown save in its effects.

2. This cause I believe to be introduced into the blood. When there, it may, and probably does, act on the blood; but its most important, if not its primary action, is on the organic nervous system.

3. That the immediate effect of its action on this nervous system is to impair or destroy its energy in a manner more or less marked, and mediately or secondarily all the organic functions which depend on this nervous system.

4. That the destruction or withdrawal of this energy, or excitant power, according to its completeness, in the same degree affects the system of organs whose office it is to supply the various parts of the body with nutriment or blood, namely, the heart and muscular arteries, particularly the latter, which are at the threshold of the tissues, and, as a consequence, we have failure, more or less, of those intimate actions between the blood and tissues, on the proper performance of which, the welfare of the organism depends, and that the symptoms are prostration, paleness of the surface, ghastly appearance of the countenance, coldness, feeble action of the heart and small vessels, feeble pulse, local congestions, collapse, failure of all the

true secretions, for want of a healthy supply of blood, and also of that excitant energy on which they depend for successful working, no less truly than do the heart and muscular arteries.

5. That the essential cause of cholera is *not* retained excretory matter, nor, necessarily, a change in the blood *per se*, but, as has been stated above; and that the primary or principal danger in this disease is this profound affection of the organic nervous system, from which the patient may die at once in collapse before discharges occur.

6. But another danger arises secondarily, in most cases, that is from the excessive discharges by which the blood becomes suddenly so much impoverished and so viscid, as to render it alike unfit to maintain life on the one hand, or, on the other, to circulate through the capillaries. These discharges occur in the following manner:—Blood is sent freely and abundantly to the abdominal viscera, or to all those parts, the blood from which is collected by the *portal* vein. The blood once in the portal vein, instead of passing as the blood *elsewhere* does, unobstructed into the great blood channels which lead directly to the heart, instead of this, I say, it is required to pass through *another set of capillaries*. Now, if what we have tried to show is true, the small vessels in the intestinal walls (and especially in the soft, yielding mucous membrane) have lost, in greater or less measure, their contractile power, as they have everywhere, against this anomalous condition of the portal circulation there is no help. We have *here* a natural difficulty in the circulation experienced nowhere else in the body save, probably in the kidney.

If our conclusions above given are *true*, it is easy to see why the blood is *detained* here as nowhere else. It is also easy to see, since there is no interruption to the *supply* of blood to the abdominal viscera, there must speedily be a great *accumulation* of blood in the vessels which ramify in the mucous membrane (we will say) of the stomach, and bowels, and in the portal vessels. It is now easy to see, if this state shall continue, that the time will soon come when the vessels will inevitably relieve themselves by copious watery exudation or effusion *on the mucous*

membrane of the stomach and bowels, and that this membrane thus congested will be somewhat irritable, to say the least, and that there will be vomiting and purging of a watery fluid, which is nothing more nor less than the serum of the blood, and that it will occur to an extent which will depend on a variety of circumstances. The patient rapidly loses the watery part of the blood which, in turn, in a way well understood, absorbs the fluids from the tissues, and, as we would expect the patient rapidly emaciates, etc. It would hardly be expected of the liver, that it would act under these circumstances, for obvious reasons. That bile, therefore, should be absent from the discharges, is not surprising, but a fairly deducible consequence. The same may be said of the kidneys and urine.

From this excessive loss of water, the patient has a raging thirst, but *any* one acquainted with the principles of osmosis, will see it is impossible much water should be absorbed from a surface, or a mucous membrane, from which water is oozing out in streams, as one might not inappropriately say. What has been said about water, may be *also* said of medicines.

When the nervous system recovers from the shock (if I may so speak) experienced, the heart and muscular arteries, and various secreting organs, etc., resume, *pari passu*, their functions. The pulse returns, the portal circulation is restored, the discharges cease, the secretions reappear, remedies begin to have their appropriate effects, and so on to recovery, many times in a space far too short (from the inception of the disease until recovery) for us to suppose it essentially a *blood disease*. Such, in view of the above conclusions, are my views, of the pathology of cholera.

Now, what shall be the treatment of cholera in the stage of collapse, which, in fully developed cases, is the only one of much importance?

1st. Remedies, administered in the ordinary way, give but feeble promise of effect in this stage, as an appeal to experience will show. The reason is obvious. If the intention is that the remedy shall be absorbed from the *stomach*, and, in the blood be carried through the body, the state of the portal circula-

tion, it is almost needless to say, forbids it. Notwithstanding this, remedies might be employed, such as calomel, or powerful stimulants, such as will arouse the mucous membrane and stimulate to contraction the engorged vessels, and, possibly, indirectly the neighboring nervous centres.

2d. In view of the coldness of the surface, and condition of its capillary circulation, we would employ heat, severe friction, and powerful external stimulants assiduously, to rouse the susceptibility of the skin, and promote the circulation in the *surface* of the body, and for the purpose of rousing, indirectly, the nervous system, through irritation and stimulation of a surface so large, and, ordinarily, so sensitive, I would use the most efficient stimulants and irritants. But, in view of the probable state of the organic nervous system, which calls for the most active and direct stimulation, which can only be effectually made when stimulants are introduced into the blood, and are carried in it to such parts of the organism as require their agency, and in view of the state of the mucous membrane of the stomach, etc., by which it is unfitted for absorption only imperfectly, I say, in view of all this, we may well look for some other channels through which we may introduce such remedies as are required, or *seem* to be. There are two or three ways in which this may be accomplished:—

1st. By extensive faradization of various parts of the body, and by currents sent in a variety of directions through the body.

2d. By inhalations, as of chloroform, ether, bromine, etc.

3d. By hypodermic injections. In this way, we may introduce beneath the skin, in many places, known quantities of various soluble substances, such as morphia, strychnia, quinia, the active principles of coffee and tea, etc., with the certain assurance they will be rapidly absorbed by the flaccid vessels and carried to all parts of the body, and in this way made to act speedily on those parts of the organism upon reaching which, with appropriate agencies, the fate of many cases depends. Such, in brief, are my views of the pathology and treatment of cholera.

To fully unfold or set forth the subject glanced at in this paper, would require a *series* of essays.

The views advocated in this paper have been incidentally referred to in a report, made to the Illinois State Medical Society, on "Cerebro-Spinal Meningitis." They are presented here because they are deemed important, and especially in connexion with our expected visitant—cholera, in which I have briefly tried to apply them; and because they have not seemed to me, for some time past, to have been sufficiently recognized by the profession.

It would be a pleasant task to apply these same principles to the inflammatory process, in all its phases, in exudations and the like, and various pathological states, and see how far, if these principles be admitted, the prevalent doctrines of inflammation are from the truth, etc. But I have neither time nor the space for this.

ARTICLE XXVI.

A NEW PLASTIC OPERATION FOR CERTAIN
DEFORMITIES OF THE FACE.

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It is very difficult to say that any plastic operation is absolutely new, because so many have been performed which have never been published, that it is probable that almost every possible principle has been made use of by some one. Still a careful examination of both European and American authorities have failed to furnish me any president for a mode of operating which I have used for some time, in certain cases, and which I deem very valuable. I, therefore, judge it to be a new operation. If, however, it shall appear that any one has practiced it before me, I will cheerfully resign my claim to priority, simply

hoping that so useful a principle will not be allowed again to slumber where it cannot be found for practical purposes.

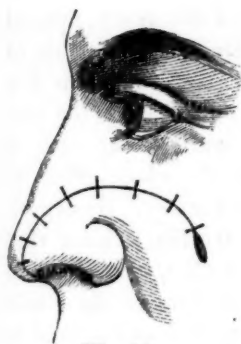
There are very serious objections to that whole class of plastic operations which consist in transplanting flaps of integument which have been completely dissected out of their beds, and only retain vascular connections at one extremity. They have so feeble a circulation that they run great risk of failure to adhere in their new locations, and may even mortify from slight causes. Again they are surrounded on all sides of their new location by a cicatrix which, after some months of contraction, very much restricts the flow of blood to them. The amount of obstruction offered to the passage of blood by an old cicatrix is very great. Hence such flaps, though they look extremely well at first, after a time begin to be atrophied, and often by the unexpected amount of their contraction, reproduce the deformity they at first corrected. I have seen old flaps of this sort which had shrunk to one-third of their original diameter.

Impressed by these difficulties, I have sought to devise methods which will allow of keeping all the more important arterial trunks untouched in the flap. My first attempt was in the



(Fig. 1.)

case represented in Figs. 1 and 2. The deformity consisted in the loss of the left *ala* of the nose, nearly up to the nasal bones. Observing that the stump of the cartilage had a smooth, firm border, well healed, and exactly of the shape to make a good edge of the nostril, I determined to make use of it for that purpose. Making an incision, therefore, along the semicircular dotted line, I produced a flap broadest at the base, and receiving on its interior surface the abundant branches of the facial artery. Dissecting up from the nasal bones a few rather firm adhesions, I found that, owing to the looseness of the tissues of the cheek, it was easy to revolve the flap on its centre without cutting its subjacent connective tissue and



(Fig. 2.)

vessels. I, therefore, refreshed the edge of the nose in a strip marked by the dotted line from the tip of the flap to the tip of the nose; then revolving the flap on its centre, I placed its cicatrized border in the position of the natural edge of the nostril, and fastened the whole with sutures, as shown in fig. 2. The outer extremity of the incision folded its edges by each other in such a manner as to allow of complete closure of the

wound. The result was most excellent.

From the experience of this instance, I am led to believe that often in case of the loss of the whole cartilaginous portion of the nose, the best method of restoration would be to bring in two flaps in the same manner, one from each side, instead of transplanting tissue from the forehead.

The second operation was an application of the same princi-



(Fig. 3.)

ple to the eyelid, for the cure of entropium. The lower lid of a patient had been drawn down and everted, by the contraction of a cicatrix following a burn, and presented the appearance shown in fig. 3.

On measurement, the tarsal border of the everted lid was found to be so stretched by its downward traction that it was about one-third longer than its fellow, requiring to be shortened by that amount. I commenced by making an incision from the inner canthus along the line of junction between the mucous membrane and the skin, separating the two membranes freely from each other, until the knife had traversed about one-third of the length of the tarsal border; then turning the edge downward, I made a semicircular sweep in the direction shown by the dotted line in fig. 3. A short in-

cision was made from the outer extremity of this sweep, upward and inward, to liberate the flap from the traction of the skin of the temporal region. It will be seen at a glance, that this flap not only had a broad vascular communication through the conjunctiva and the skin near the external canthus, but what is still more important, it preserved intact the whole group of arterial twigs given off from the infra-orbital artery. By experiment, I found the subcutaneous tissue of the flap so loose that by simply dissecting up a little of its lower edge, it was easy to

slide or revolve the whole of it upward and inward to its proper position against the eye.



(Fig. 4.)

It was revolved in this manner, therefore, until its apex, that is, the point where the incision turned downward from the tarsal border, was carried upward and in-

ward quite into the inner canthus, where it was lodged and stitched into the incision between the mucous membrane and the integument. Figure 4, represents the flap in its place, with the sutures inserted, but not yet tied. The flap having being cut with the lower edge corresponding to the direction of its curve of revolution, filled without difficulty the place intended, leaving a vacant triangular space near the malar bone. The sutures sloped inward, as shown in the cut, in order to hold the



(Fig. 5.)

flap well up to its place, and the triangular vacancy was closed by three stitches, drawing its sides to the centre, as shown in the figure. On tying the sutures, the whole presented the appearance displayed in fig. 5.

This patient had an attack of traumatic erysipelas, which

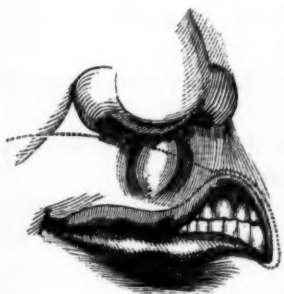
destroyed a part of the adhesions; nevertheless, the result was very good, though not quite perfect. In another case of the same sort, I took the precaution to free the flap a little more from its subcutaneous adhesions, and to place it higher up against the eye, to allow for a little settling or depression, which occurs after the operation in consequence of the elasticity of the tissues. This gave a still better result. The punc-

tum lachrymal in this case had been destroyed, so that no care was required to avoid it; but when it exists, it should be left on the conjunctival side of the incision, and care be taken not to injure the lachrymal duct. During the healing, and for some time after, the flap was kept supported by adhesive straps.

Encouraged by my experience in these cases, I have applied the same principle to the restoration of lost

portions of the lips. I have operated on four such cases in this manner, with the most perfect success. Fig. 6, represents the first of them. The left half of the mouth had been reduced to the form of an open triangle by a previous attack of gangrene, which destroyed a portion of the cheek and about

one-quarter of the upper-lip. After the parts had healed, they presented the appearance shown in this figure. The prolabium of the upper-lip was drawn up so as to constitute the inner side of the triangle; the old cicatrized edge of the cheek constituted its outer side, and the prolabium of the lower-lip its base. Taking the scalp, I pared the cicatrized edge of the cheek, and then cut through the whole thickness of the lip, along the curve shown by the dotted line. The flap was



(Fig. 6.)



(Fig. 7.)

then easily revolved into the position

shown in fig. 7, and fastened with sutures and adhesive straps. The lip is always favorably disposed for adhesive union, and the results in all my cases on this organ were all that could be desired.

This method of operating is, of course, not adapted to all facial deformities; but where it is applicable, it affords the following important advantages:—

1st. The flap is better nourished, and, therefore, less liable to mortify, or fail of adhesion, than in any operation hitherto devised.

2d. For the same reason, it is less liable to a slow subsequent atrophy.

3d. There is no open spot left after the operation to heal by granulation and form an unsightly scar.

ARTICLE XXVII.

REMARKS ON DR. WRIGHT'S THEORY OF CHOLERA.

By D. W. FLORA, M.D., of Chicago.

From the regularity in the times of the advent of cholera, and the universality and sameness of its effects upon the human being, Dr. WRIGHT concludes that the predisposing cause is not found upon, nor within, the earth, but that some other planet or celestial body, in crossing the earth's orbit, leaves in space some influence imperceptible to the senses, but baleful to the health and life of mankind.

The Doctor might have included the inferior animals as coming under this "baleful influence." Preceding and accompanying the cholera in the year 1832, in India, Russia, and Poland, not only the cattle, but camels, dogs, goats, and poultry died from a peculiar plague or pestilence, while the rooks, daws, and migratory birds, perceiving this "baleful influence," took their untimely departure. In the department of the Seine, in France, the carp in the ponds died in great numbers during the

cholera season. At each subsequent visitation of this scourge of mankind, the same phenomena have occurred, as witness the *rinderpest* in Russia, England, and other countries.

It is hardly necessary to mention the "miasmatic," the "animalcular," the "cholera cell," and the "cholera dust" theories. They are all contradicted by well-established facts. The facts and arguments in favor of contagion and against it are pretty equally balanced.

Dr. WRIGHT's theory of celestial origin excludes all telluric influences as predisposing causes. In fact, I am disposed to regard them as merely effects or, at most, modifying causes. Dr. BARTHOLOW considers the special telluric influences favoring the rise, development, and spread of cholera to be, long-continued dryness of the atmosphere; a high temperature; a close and still atmosphere, with increased pressure, as indicated by the barometer; and *an almost total absence of ozone*. This last phenomenon I look upon as most important in directing us to the true cause of cholera; for, whether ozone be regarded as an independent element, or merely electrified oxygen, its presence in the atmosphere depends, in either case, upon electrical disturbance, and its absence indicates a corresponding want of electrical action.

So pleased am I with Dr. WRIGHT's theory, that I am willing even to accompany him to the celestial bodies, to learn more of it. But the Doctor will not admit that this sidereal, solar, lunar, or cometary influence which produces cholera is appreciable by our dull senses, or any aids which we may bring to bear in our search for it.

There is one celestial influence which is known to be exerted on this earth, namely, the magnetic attraction of the sun and moon. This is demonstrated by the mariner's needle. Why may not the planets and other heavenly bodies exercise a similar influence? The Doctor says, most truthfully, that the sensible seat of cholera is in the lining membrane of the stomach and bowels, which is the same as saying that cholera attacks and destroys the nutritive or vegetative system of man, which is sometimes called the system of organic life. Little is said of

the influence which electricity and magnetism exert upon this function which in animals and vegetables is the same, namely, absorption and assimilation. Some of my readers may remember the experiments made some years ago by applying galvanic currents to germinating and growing plants, by which these processes were greatly accelerated. Man is sometimes spoken of as though he was comparatively independent of certain earthly or telluric influences, the earth being considered merely as a "house" or "tabernacle." Nothing can be further from the truth. Man, with regard to this vegetative or organic life, is as much dependent upon the earth and surrounding elements as the plant upon its surface. His perfect organism (exceeding all others) is not life. It is passive—furnishing a condition of life merely. It is only by the action of such agencies as oxygen, hydrogen, light, heat, electricity, magnetism, etc., upon his body and the reaction of the body upon the same, which give us the phenomenon which we call life. Derange the relations which his organism bears to one of these agencies or elements and the functions of the body are proportionately deranged. Withdraw or destroy one or more of these external agents, and death of the organism is the result.

This nutritive system is spread out over a great surface, resembling the leaves of the plant, for it must be borne in mind that the leaves are more than lungs, they are digestive organs. How admirably this great surface is adapted to the electrical action or function which is always on the surface.

The Doctor, in speaking of the progress of an attack of cholera, says:—"That the natural attraction of the capillary system for the blood must not only be suspended, but instead of the constant affinity existing between the blood and the solids, resulting in health, in the molecular changes of reproduction and decay, cholera, either through morbid impressions upon the ultimate nervous fibrillæ, or through changes in the blood itself, or both together, induces a state of *positive* and *energetic repulsion* between the solids and liquids throughout the entire structure." What is the cause of this repulsion? What is the constant "affinity" mentioned as existing between

the blood and the solids but magnetic attraction, and what is the "energetic repulsion" but magnetic or electrical? The body, as a whole, is a magnet; the blood globules, by reason of their iron, are magnetic also. In this mutual repulsion between fluids and solids, the bowels are entirely passive. This, Dr. WRIGHT recognizes, when he says:—"The fluids reverse violently their natural course of progression; not by reason of attraction, or disease, or any special condition of the bowels, but by *repulsion* from the general capillary, or peripheral, or ulterior tissues."

In speaking of cramps, and their cause, the Doctor remarks, "that although the respiration may be sufficient, it is plain to see that the vital changes in the blood are not perfectly performed." This is attributed to the fact "that the lungs suffer from the great drainage, in common with the rest of the system." Is not the office of the lungs, in a great degree, passive, as shown in artificial respiration, where they act more like a pair of bellows. The reason assigned above for the imperfect aëration of the blood cannot be the true one, so long as "inspiration and expiration are sufficient." May not this imperfect aëration, and also this repulsion between the blood and solids be due to *want of a proper amount of electricity in the inspired oxygen?*

May not this want of electricity, in the lung capillaries and surface capillaries of the body, be the cause of the inertia in the vascular system? The relation of positive and negative, as existing between the blood and these capillary systems, is probably changed, and hence the "energetic repulsion." Dr. WRIGHT's pathology and treatment are eminently sound and rational, and he remarks, in view of the relative influence of fear as a depressing cause, and regimen as conservative to life: "It is a principle beyond cavil, that there is a certain amount of nervous energy natural to each personal organization developed in health within certain periods, no more, no less." This answers the question, why all persons do not have cholera when the cause is so universal. It is the want of this "nervous energy" which predisposes to cholera, as the presence of it in

a high degree fortifies the possessor against the cholera influence. In regard to the electrical phenomena attending cholera, my personal experience is limited, as well as my opportunities of ascertaining the results of other men's observations.

During the year 1850, many of the towns and villages in Ohio were decimated. In a little village of 300 inhabitants, in which I resided at the time, there were 30 deaths. The weather was dry and not excessively warm. But one thunder-storm occurred during the cholera season, and it was followed by a marked abatement of the disease, so much so that fugitives returned and all congratulated themselves that the scourge had taken its departure. But we were doomed to disappointment. In a week or two it broke out with equal violence, and did not stop short of decimation. The absence of electrical phenomena was found to coincide with the absence of *ozone* in this locality. This has been the observation of several of my medical acquaintances, but I cannot claim from my own knowledge that it was a general condition.

A few words as to treatment, and I shall have done. Dr. WRIGHT and some others which I have read, seem to be opposed to friction. Now, friction, with a view to arrest the cramps, can do no good, and may, as they claim, do harm by depleting the already collapsed vascular system. But gentle friction, surface rubbing with a hair glove or the dry hand to excite electrical action, cannot fail to do good. Nay, galvanism is strongly indicated, and when it is remembered that by it the temperature of a paralyzed limb has been raised 7° of Fah. it promises, if judiciously and scientifically applied, beneficial results. There is one fact to which I will briefly refer and then close.

All authorities which I have read recently, condemn the use of moisture and moist applications to the body. They all unite in saying that it favors *collapse*. This I can readily believe, for moisture is a bad conductor of electricity, and the poor patient by its application is cut off from even such an amount as might be generated by contact with the dry bedclothing and the atmosphere, hence, it is proper to use dry heat, dry mus-

tard, and dry ice to the spine, as recommended by Dr. CHAPMAN, in his work on cholera.

157 Cottage Grove Ave., June 19, 1866.

ARTICLE XXVIII.

REPORT ON THE PREVALENCE OF DISEASES, IN
THE CITY OF CHICAGO, FROM APRIL 1ST,
TO JUNE 30TH, 1866.

By N. S. DAVIS, M.D., Committee.

Read before the Chicago Medical Society, July 6th, 1866.

During the three months ending June 30th, 1866, the general sanitary condition of this city has been better than during the same part of the two preceding years. The months of April and May were cool and comparatively dry. The adoption of a scavenger system, though very imperfect, and the extra efforts to clean the street gutters and alleys earlier than usual, has made a perceptible improvement in the physical condition of the city. Still there are many things injurious to the public health that remain untouched, but they have been so often alluded to in former reports, that further enumeration is unnecessary at present.

During the past three months, the hydrant water for the city has been in comparatively good condition, and until the middle of June, the river was not notably offensive. Since the last-named period, the North Branch has been emitting a very offensive odor, and the South Branch, above 12th Street, has not been much better.

The atmospheric conditions during the months of April and May were highly favorable to health. The electricity was abundant, the moisture less than usual for the season, and the prevalent winds from the north, north-east, and west, rendering the atmosphere cool and invigorating to animal functions.

The only exception to this general condition, was the 19th of May, when a direct south wind brought a current of hot, damp atmosphere, extremely oppressive, but which ended in slight showers in the evening, with a change in the wind to the north, and decided coolness on the morning of the 20th. The same general conditions continued until the morning of the 8th of June, which was ushered in with a wind from the south, and continued hot, sultry, and very oppressive all day. Showers of rain fell in the evening. On the morning of the 9th, the wind blew from the west; and on the 10th, from the north and north-east, and both days were cool and bracing. During the morning of the 11th, the wind again changed to the south, and the afternoon became very hot and oppressive, with slight showers in the evening.

During the last three days, I have met with seven severe cases of dysentery, and several slighter ones, in different parts of the city. These constitute the first notable indications of the prevalence of bowel affections this summer.

The night of the 11th and all the 12th, the atmosphere continued hot, damp, and oppressive, with copious showers in the afternoon. Attacks of diarrhœa and dysentery increased rapidly, especially in children. One very severe case of cholera-morbus, in an adult, occurred during the night of the 11th, at 212 Kankakee Avenue, and another on West Harrison, near Morgan Street. Both were accompanied by cramps in the extremities and rice-water discharges, but neither proved fatal.

During the 13th, the wind was from the west, and the atmosphere cooler and dryer. The 14th, wind, in the morning, south, warm, and damp, but changed to S.W., with showers in the afternoon. During the 15th, 16th, 17th, 18th, and 19th, the wind was north and north-west, with the atmosphere dry, clear, and cool enough to make an overcoat comfortable. During these days, I saw only two new cases of cholera-morbus, but cases of dysentery continued to multiply, both in children and adults. On close inquiry, however, nearly all the cases began between the 11th and 14th.

On the 20th, wind again changed to south, and the afternoon

very hot, oppressive, but clear. 21st, same, with showers and some lightning in the afternoon. From the 22d to the 26th, the prevalent wind was from the south and south-west, atmosphere hot and oppressive in the afternoon, but often cool and pleasant in the morning, and generally dry.

During these warm days, from the 20th to the 27th, both serous diarrhœa and dysentery increased rapidly among young children, and to some extent among adults. The increase was so marked that nearly one-half of all the patients under my care, both in the office and out, were affected with one or the other of these diseases.

The 28th was cool and cloudy, with north-east wind. 29th and 30th, clear, cool, wind north and north-east.

From these detailed memoranda, as they were made from day to day, it appears that the first noted increase of bowel-affections for the present season was during the hot, damp, showery days of the 11th and 12th of June. It was during the night of the 11th, that I noticed the two first cases of severe vomiting, copious serous or rice water discharges, with muscular cramps, etc., in adults. One was a female, residing at 212 Kankakee Avenue, in the extreme southern part of the city, and the other was a man, on West Harrison Street, far towards the western border. From that date to the end of the month, ordinary attacks of diarrhœa and dysentery have continued to increase, especially among young children. But I have observed nothing unusual in their tendencies or results.

The only disease that has prevailed so extensively as to merit the title of epidemic, during the last three months, is measles. It first began to attract my attention on account of its unusual prevalence during the second week in June. It continued to prevail in all parts of the city through the remainder of the month. The cases were most numerous and severe between the 10th and 20th of June. Several adults suffered severe attacks, and in a few instances I found five and six cases in the same house, including the mother and all the children of the family. In a majority of the cases, the catarrhal symptoms were very severe; the eruption copious, and in some accompa-

nied by sudaminae. In a few of the cases of children under two years of age, lobular pneumonia supervened during the active stage. In two cases of nursing children, about the time for the decline of the eruption and fever, universal capillary congestion of the lungs supervened suddenly, giving to the lips, surface, etc., a dark purplish appearance, and causing speedily fatal results.

Coincidentally with the prevalence of measles, there occurred a considerable number of cases of scarlatina and whooping-cough. Between the 13th and 20th of June, several cases occurred, presenting the symptoms of a mild grade of cerebro-spinal meningitis, and in two the disease was more fully developed and proved rapidly fatal. One of these was a man who had recently arrived in the city from New Orleans, and was taken to the Mercy Hospital. The characteristic dark purple spots were thicker and more universally developed over the whole cutaneous surface than I had ever before seen. In addition to other remedies, the bromide of potassa was given to this patient liberally, but without any apparent effect. He died on the fourth day after admission to the hospital.

The influence of atmospheric conditions on the prevalence of certain diseases, is as clearly shown by comparing the mortality of the three past months with each other, as in the preceding details. Thus, in April, the gross mortality was 278, of which 13 only are attributed to diseases of the bowels; in May, the numbers are nearly the same; but in June, the gross mortality was increased to 319, of which 34 were attributed to cholera-morbus, diarrhoea, and dysentery. Should the special qualities of the atmosphere presented on the 11th and 12th, and from the 20th to the 28th of June, become the prevailing qualities during the month of July, the mortality from cholera, diarrhoea, and dysentery will be unusually great.

ARTICLE XXIX.

TWO CASES OF ANGULAR CURVATURE, SUPERVENING UPON LATERAL CURVATURE OF THE SPINE.

By F. O. EARLE, M.D., of Chicago.

I herewith send the history of two cases, which present some degree of similarity in the phenomena attending them, and are interesting not only on that account, but also as illustrating one or two points in the differential diagnosis of "Potts' disease" of the spine, exhibiting the slow and insidious access of this malady in certain instances, and showing the necessity of a careful and thorough examination, and the great importance of an early and correct diagnosis in these cases.

I have no recollection of seeing the report of similar cases, and they are the first that have come under my own observation.

CASE I. In April, 1865, I was called to see Miss W., *æt.* 19. She said she had always been delicate; she had a very poor appetite; menstruation irregular, always painful, sometimes profuse, on other occasions almost wanting; bowels generally very loose, though sometimes constipated; she also complained of a burning, painful sensation at various points along the course of the spine, which was greatly increased by the slightest amount of pressure, (*spinal irritation*, so-called,) and examination revealed the existence of a well-marked lateral curvature. She had, moreover, a very pale countenance, constantly complained of exhaustion, her temper was rather irritable, and every movement was indicative of extreme languor.

Regarding all these symptoms as the result of the manifest debility of the organic system, consequent upon an increased irritability of the nervous system, the case was treated in the following manner:—Attendance at school was prohibited, and rest from bodily exertion and mental effort insisted upon. A general tonic course of treatment, in connection with a system of "localized exercise," given daily, was adopted. At the end of two months, my patient had improved in every respect. The

painful sensitiveness of the back was entirely relieved; the curvature had almost entirely disappeared; and all the organic functions were performed without that distress and uneasiness by which their actions were formerly characterized.

At this time, she went into the country, and after an absence of a few weeks, returned still more improved, declaring that she was "enjoying perfect health," which appeared to be the case.

In the latter part of April, 1866, I was requested, by the young lady's mother, to see her again. She said the curvature had increased, and, on examination, I discovered that such was *apparently* the case, though a more critical survey disclosed a very slight projection backward of one spinous process in the centre of the supposed curve. This appearance led me to inquire if the patient had suffered any from *pain in the region of the stomach*, and I learned that she was then taking remedies, prescribed by the medical attendant of the family, for dyspepsia, which it was supposed was causing the painful sensations experienced by the patient in the epigastric region. I then requested the patient to stretch the arms above the head and bend forward without flexing the spine, while, at the same time, I grasped the hips firmly. By this means, the *lateral deviation* disappeared, though the projection still remained, leaving no room to doubt the true nature of the case.

I immediately explained the nature and result of the malady to my patient, and, at her mother's request, applied a proper mechanical support. Her vitality being very low at the time, she showed scarcely any signs of improvement until about two weeks since. There is now an amelioration of all the constitutional and local symptoms.

It may be questioned by some reader of this article, whether ulcerative inflammation of the bodies of the vertebræ or of the inter-vertebral substance was not present when this patient was first seen. I answer, no! if such had been the case, all the symptoms would have been aggravated, rather than mitigated, by the treatment at that time adopted.

CASE II. Miss B. *æt.* 23, very tall and slim, presented her-

self, two years ago, for advice with regard to lateral curvature. She complained of nothing in particular, excepting "want of strength." Examination showed lateral curvature in its first stage—there being a lateral bending of the spine low down. A simple apparatus, made of firm webbing and applicable to such cases, was applied, and certain specific and general exercises were given to develop the dorsal muscles, and with such good effect that she was dismissed in a few weeks, greatly benefited.

A short time ago, she returned, at the request of the family physician, saying that the curve was increasing. The statement was doubted, it being so unusual for a lateral curvature to be developed at that age. But a physical examination disclosed the fact that it *was* increasing. Upon minute inquiry being made into the accompanying symptoms, it was found that there *was difficulty of turning or rising after lying down, particularly in the morning; and a dull, scarcely noticeable pain in the stomach, especially when she was fatigued.* By stretching the arms above the head and bending forward, as in the other case, the 1st, 2d, and 3d lumbar vertebræ were seen protruding in the manner that is usual when there is loss of substance in the bodies of the vertebræ. In connection with this projection, was a recession of the last dorsal vertebræ.

An apparatus was applied, as in the first case, and with even happier results, the lateral deviation disappearing at once.

Proceedings of Societies.

MEDICAL CONVENTION.

Pursuant to previous notice, physicians from the counties of Bureau, Henry, Knox, and Stark met at Kewanee, May 22d, 1866, to organize a District Medical Association.

On motion, H. S. Hurd, M.D., of Galesburg, was called to the Chair, and Geo. H. Scott, M.D., chosen Secretary.

On motion, proceeded to the organization of a District Medical Association.

On motion, a committee of three, consisting of Drs. N. Holton, of Buda, Jas. M. Morse, of Galesburg, and J. C. Smiley, of Kewanee, were appointed, to present a constitution and by-laws for said association.

The committee submitted the following Constitution and By-Laws which, on motion, (the committee being discharged,) were approved and adopted, article by article:—

CONSTITUTION.

ART. 1. This Association shall be known and designated as the Military Tract Medical Association.

ART. 2. This Association is to embrace the members of the regular medical profession, who are in good standing in the profession, in the counties of Bureau, Henry, Stark, Knox, and Warren.

ART. 3. The physicians present at the adoption of this Constitution, may be members of the Association.

ART. 4. Any regular graduate of an orthodox school, or any physician passing a satisfactory examination before the Board of Censors, may become a member by a vote of the Association.

ART. 5. The officers of this Association shall consist of a President, Vice-President, and Secretary, who shall act as Treasurer, and three Censors; to be elected annually, by ballot, by a majority vote of all the members present.

ART. 6. This Association shall be governed by the Code of Ethics adopted by the American Medical Association.

ART. 7. This Constitution may be altered or amended by a vote of two-thirds of the members present at any regular meeting.

BY-LAWS.

ART. 1. The President shall appoint, at each regular meeting, two members to prepare and deliver, at the next regular meeting, an essay on some medical subject, or report a case.

ART. 2. The report of cases and essays made before the Association at its regular meetings, shall become the property of this Association.

ART. 3. Any member who has conducted himself properly during his membership, shall, if he require it, receive a certificate of character, signed by the President and Secretary.

ART. 4. The meetings of this Association shall be held twice a-year, in the months of May and December.

On motion, the Association proceeded to the election of officers, when the following were duly elected:—

For President.—A. H. Thomson, M.D., Princeton.

For Vice-President.—H. Nance, M.D., Kewanee.

For Secretary and Treasurer.—Geo. H. Scott, M.D., Kewanee.

For Censors.—Drs. N. Holton, Buda; Jno. M. Morse, Galesburg; and V. C. Secord, Galva.

For Delegates to the State Medical Convention.—Drs. H. Nance, Kewanee; S. P. Breed, Princeton; Jno. M. Morse, Galesburg; W. C. Brown, Geneseo; and A. D. Babcock, Galva.

Moved and adopted, that the initiation fee shall be \$1.00.

Moved and adopted, that the Secretary purchase a blank book, at the expense of six or eight dollars, in which to record the proceedings of the Association.

Dr. A. H. Thomson offered the following, as the order of business. Approved:—

ORDER OF BUSINESS.

1st. Reading the minutes of last meeting.

2d. Report of Censors on credentials for admission.

3d. Election of officers at annual meeting.

4th. Reading of essays, and discussion.

5th. Report of cases and presenting morbid specimens.

6th. Miscellaneous business.

On motion, it was decided that our next meeting be held at Galesburg, on the second Tuesday in December, 1866.

Moved by Dr. Holton, and adopted, that one from each county be appointed a committee to report on the endemic and epidemic diseases of the county.

The following physicians were appointed:—Drs. N. Holton, Buda; Jno. M. Morse, Galesburg; H. Nance, Kewanee; and E. K. Boardman, Elmira.

Moved by Dr. Babcock, and adopted, that the Secretary notify each member, by circular, one month before the ensuing meeting.

A vote of thanks was passed to the medical brotherhood of Kewanee, for the hospitable entertainments extended to the members of the Association; also to the trustees of the Congregational Church, for the use of their edifice.

The following is the list of members:—

Drs. H. S. Hurd, Galesburg; Geo. H. Scott, Kewanee; A. H. Thompson, Princeton; J. C. Secord, Galva; Jno. M. Morse, Galesburg; A. C. Babcock and A. D. Babcock, Galva; N. Holton, Buda; Geo. W. Crossley and S. P. Breed, Princeton; G. H. Vance, Victoria; H. Nance, Kewanee; S. T. Hume, Geneseo; C. M. Clark, Galva; W. C. Brown, Geneseo; W. H. Day, Kewanee; E. K. Boardman, Elmira; J. C. Smiley, Kewanee.

On motion, the Secretary was instructed to have the proceedings of the Association published in the papers in this District; also in the medical journals of the State.

On motion, the Association adjourned, to meet in Galesburg on the second Tuesday in December.

A. H. THOMPSON, M.D., *Pres't.*

GEO. H. SCOTT, M.D., *Sec'y.*

ANNUAL MEETING OF ROCK RIVER UNION MEDICAL SOCIETY.

The physicians of Lee, Ogle, and Whiteside Counties, met at Morrison, Ill., on Wednesday, June 13th, it being the annual meeting of the above named Society, for mutual improvement.

The meeting was called to order by the President, Dr. H. UTLEY.

The minutes of the last meeting were read and approved.

Dr. D. H. Law, of Dixon, and Dr. J. H. Page, of Como, were elected members; and, on motion, Dr. H. E. Dykeman was invited to participate in the proceedings of the Society.

and to be considered a member, on presenting his credentials to the Board of Censors.

The Treasurer reported the current expenses of the Society all paid, and seventy-five cents in the treasury.

Dr. G. A. BARDWELL reported a case of cerebro-spinal meningitis in a young lady. The Doctor reported the case, because of its presenting one peculiarity, *viz.*:—loss of vision in one eye, and a distinct milky appearance of the pupil of that eye.

The disease having prevailed as an epidemic, during the past two years, in several localities in this region, and many of the members present having been called to treat cases of the same, therefore quite a lengthy discussion occurred, which was participated in by several of the members present.

On motion, the following resolution was unanimously adopted, *viz.*:—

Resolved, That, as Dr. D. C. Gould, of Sterling, Ill., who claims to be a "regular physician," and who made application to become a member of this Society, but failed to present his credentials or diploma; and has recently claimed to have discovered a specific for the cholera, which he advertises as worthy of approval by the medical profession, and which he is selling to the people; we take this occasion to state, that we, as a profession, and as individuals, do not endorse the course pursued by him; and we regard his so-called specific a humbug, and himself an imposter.

As officers for the ensuing year, the Society elected Dr. G. A. BARDWELL, President; Dr. M. M. ROYER, Vice-President; and Dr. H. C. DONALDSON, Secretary and Treasurer.

The Society voted the forwarding of these minutes to both Chicago medical journals for publication, and also to the editors of our county papers, published at Dixon, Morrison, and Sterling.

Adjourned to meet at Sterling, on Wednesday, the 5th day of December, next.

H. UTLEY, M.D., *Pres't.*

H. C. DONALDSON, M.D., *Sec'y.*

CLINTON MEDICAL SOCIETY.

At a meeting of the Clinton Institute of Medicine, held on the 19th day of June, 1866, the following preamble and resolutions were, on motion of Dr. John A. Edmiston, unanimously adopted:—

Whereas, We, the physicians of Clinton, Ill., having been, from time to time, strongly solicited by the agent of J. R. Nichols & Co., manufacturing chemists, of Boston, Mass., to prescribe and recommend their chemicals, tinctures, and mixtures; and,

Whereas, We have seen advertisements in the public newspapers, wherein Nichols & Co.'s preparations are recommended and puffed to the public the same as other quack nostrums; therefore, be it

Resolved, That the course pursued by James R. Nichols & Co., for the purpose of introducing their preparations, as shown by their advertisement in the *Chicago Daily Republican* of June 15th, 1866, recommending as a popular medicine for general use, their preparation of the syrup of sarsaparilla with iodide of lime, is not only detrimental to the interest of the public, as well as the profession, but a violation of their assurances, that they would resort to no unfair means.

While they confined themselves to the legitimate object of furnishing the profession their preparations in a pure and reliable form, we believed it a worthy object, and gave them a hearty support; but, by this endeavor to vend one of their preparations on the same plan as the many patent humbugs of the day, they lose our confidence, and, if persisted in, we will consider it good and sufficient cause for their rejection from our practice, altogether.

Resolved, That the Secretary be instructed to forward a copy of these resolutions, signed by the members of this Institute, to James R. Nichols & Co., and, also, a copy to each of the Chicago medical journals.

C. GOODBRAKE, M.D., *Pres't.*

B. K. SHURTLEFF, M.D., *Sec'y.*

Selections.

LOCAL ANÆSTHESIA.—An extract from the following article was copied into the May number of the EXAMINER, but the subject is of such importance that we have thought it best to republish the whole article.—ED.

ON A NEW AND READY MODE OF PRODUCING LOCAL ANÆSTHESIA.

By BENJ. W. RICHARDSON, M.A., M.D., F.R.C.P., Senior Physician to the Royal Infirmary for Diseases of the Chest.

Some years ago, I published in the columns of the *Medical Times and Gazette*, some researches for the production of local anæsthesia, by a process which I designated voltaic narcotism. Those researches, very much praised on the one hand, and very rudely and unfairly attacked on the other, failed in the end in leading me directly to any practical means of producing local insensibility applicable to surgical proceedings. The causes of failure were threefold. The apparatus required was very cumbersome; the application was painful; the result was uncertain. In the course of the past year a similar series of experiments have been made by an Italian physician; but whether in imitation of my previous labors or in ignorance of them, I do not know: they have proved equally unsatisfactory.

The researches on voltaic narcotism, although practically of little value, were not in reality without their use. Previously to making them I was quite conversant of the fact—indeed, I learnt it from Snow—that all the narcotics produced anæsthesia by the process of arresting oxidation; but I had still to learn what Snow himself had not reached, that arrest of oxidation meant, in the end, arrest of motion; and that anæsthesia, in truth, means the temporary death of a part influenced—i.e., inertia in the molecules of the part.

Learning this, I discovered that voltaic narcotism had at its base a fault. My idea in it was, that by quickening the circulation of a part by galvanic stimulus, and by applying over the part where circulation was quickened a narcotic solution which the blood could absorb, I could so charge the blood locally with narcotic substance as to produce local insensibility. In feeble subjects, as the result proved, local narcotism could, in this

way, be temporarily set up: but it was always attended with a certain amount of disorganization. In strong subjects it failed altogether, because such of the narcotic as might be absorbed was carried rapidly into the general circulation. In plain words, by the use of the galvanic current, I was committing the paradox of applying a form of motion for the indirect production of inertia.

The failures I experienced at the period referred to in no degree lessened my efforts to find a practical means for producing a local insensibility. They simply caused me to think more on the whole subject, and to invent new methods of inquiry. I came at length to the conclusion that Dr. James Arnott's plan of using extreme cold was the first true step of discovery, and that if it could be made easier of application, and at the same time could be combined with the use of narcotic fluid, an important advance in therapeutics would necessarily follow. For full four years this truth has been before my mind, and I have made numerous experiments with the view of demonstrating it. At one time I tried to freeze parts by the application of ice and salt, and then to inject by the hypodermic plan narcotic solutions into and beneath the frozen tissue. These experiments were never sufficiently satisfactory to allow of their publication. At last I hit upon a method which I am now about to describe, and which, although admitting of very considerable improvement, is sufficiently important to justify me in laying it before the profession.

THE ANÆSTHETIC SPRAY PRODUCER.

When the toy for diffusing eau de cologne in fine vapor over the skin, in the form of spray—which sometime ago found its way into our drawing-rooms—first came before me, it struck me at once that it might be applied to the production of local anæsthesia; and I set to work to try its applicability in this respect. I was soon afterwards assisted largely in my labors by taking advantage of Siegle's apparatus, with the hand-ball spray-producer invented by my valued friend Dr. Andrew Clarke, and supplied by the manufacturers, Messrs. Khroné & Seseman, of Whitechapel road.

With this apparatus I set myself to determine the degree of cold that could be produced by the vaporization of all the known volatile liquids, and I determined the fact that the intensity of the cold produced held a definite relationship to the boiling-point of the fluid used; the rule being that the lower the boiling-point the greater was the amount of cold exhibited. In these

inquiries I employed a very delicate thermometer, directing the spray upon the bulb from half an inch to an inch and a-half from the point of the jet. By these means I learnt that with rectified sulphuric ether I could bring down the thermometer within 10 degrees Fahr. of zero, and that by directing the jet on the skin I could produce a certain definite and marked degree of local insensibility, but not sufficient for surgical purposes.

I next got Mr. Krohne to construct for me a hollow cylinder of thin metal, six inches long and three inches in diameter. In the circumference of this cylinder was a chamber one-eighth of an inch in diameter for containing ether. The ether communicated with a tube which was joined to an air-tube, as in Siegle's apparatus, and the centre of the cylinder was filled with ice and salt mixture. In this way the ether was reduced to zero, and when vaporized gave spray which brought down the thermometer six degrees below zero, and produced on the skin such entire insensibility that I could pass a needle through the part without sensation. On the 11th of December, 1865, I applied this process for the first time on the human subject for an operation. The patient was a lady, who required to have five front teeth extracted. I had previously administered chloroform to this lady for a tooth extraction, but the inhalation had produced so much irregularity in the action of the heart and other disagreeable symptoms, that I considered it inadvisable to repeat chloroform, and she herself was only too ready to give the local measure a trial. The extraction was performed by my friend Mr. Peter Matthews. On directing the ether spray first at a distance and then closely upon the gum, over the first central incisor on the left side, we observed, at the end of fifty seconds, that the gum had become as white as the tooth itself, and quite insensible. I then directed the vapor upon the tooth for twenty or thirty seconds more, and on the patient intimating that she did not feel, I suggested to Mr. Matthews to proceed. He extracted a very firm tooth without the slightest expression of pain. The process being continued in the same manner, he extracted three other teeth with the forceps. The other gave way, and had to be removed by the lever; but in all cases the result was equally good. Not a drop of blood was lost; there was no painful reaction; and the healing process proceeded perfectly. Our patient who was exceedingly intelligent, was specially requested to note every step of the operation, such as the applying of the forceps, the insertion of the blades beneath the gum, the loosening process, and the removal. She told us

that in two of the extractions she felt nothing; that in one it seemed as though the jaw altogether were being pulled downwards, but without pain; that in another she was conscious of a kind of wrench or loosening but without pain, and that the introduction of the lever was attended with a momentary dull ache, just perceptible. On the whole, the process was quite as painless as when she took chloroform.

On December 13th, I applied the local anæsthetic to the same lady for the further extraction of nine teeth, Mr. Peter Matthews again operating. The results were equally good with the first seven, at which point, unfortunately, the apparatus partly ceased play. At the eighth tooth pain was felt, and at the ninth, the apparatus being out of play, the operation caused great pain. We regretted this much, although it gave us the information of the perfect action of the process when no mechanical obstacle interfered with it. The reason why the apparatus stopped play was very singular, and could hardly have been foreseen. It arose from the condensation of water derived from air in the air-tube, and from blocking up the fine jet with a little portion of ice.

In the next step of research, I got Mr. Krohne to make for me an apparatus with two spiral tubes, one the air-tube, the other a tube for ether; and I immersed these spirals in a closed chamber filled with ice and salt. The degree of anæsthesia at first produced was most intense, and Mr. Spencer Wells was good enough to allow me the opportunity of applying the process in a case where an operation was required for closing a perineal rupture. Unhappily the apparatus, from the very same cause as before, ceased to yield a current; water condensed and became frozen in the air-tube. The apparatus itself was also found too cumbersome for practical purposes; I therefore, in this trial failed to obtain any result.

By this time I had been led, very reluctantly, to the fact that the use of ice and salt for reducing the ether was a failure when the plan came to be tried in practice, nor could I see any ready way of preventing the difficulties that were brought before me. Added to these difficulties there was another, which has always attended my friend Dr. Arnott's plan, viz., that of getting the ice and salt readily for operation. To succeed, therefore, it was requisite to dispense with the ice and salt together.

In considering how this object could be achieved, it occurred to me that if a larger body of ether than is supplied by Siegle's apparatus could be brought through the same jet, by mechani-

cal force, in the same interval of time, and with the same volume of air, a proportionate increase of cold must necessarily be produced. The theory was one of pure physics, admitting even of arithmetical demonstration, and running parallel with the lessons which had been taught me with respect to the cold produced by liquids having different degrees of boiling-point. The theory was put to the test at once, and proved correct to the letter. By driving over the ether under atmospheric pressure, instead of trusting simply to capillary action—or to suction, as in Siegle's apparatus—the spray evolved brought the thermometer within thirty seconds to four degrees below zero—the result that was desired. .

Ascertaining this truth, I instructed Messrs Krohne & Sese-mann to construct a proper apparatus. It consists simply of a graduated bottle for holding ether; through a perforated cork a double tube is inserted, one extremity of the inner part of which goes to the bottom of the bottle. Above the cork a little tube, connected with a hand bellows, pierces the outer part of the double tube, and communicates by means of the outer part, by a small aperture, with the interior of the bottle. The inner tube for delivering the ether runs upwards nearly to the extremity of the outer tube. Now, when the bellows are worked, a double current of air is produced, one current descending and pressing upon the ether forcing it along the inner tube, and the other ascending through the outer tube and playing upon the column of ether as it escapes through the fine jet. By having a series of jets to fit on the lower part of the inner tube, the volume of ether can be moderated at pleasure; and by having a double tube for the admission of air, and two pairs of hand bellows, the volume of ether and of air can be equally increased with pleasure, and with the production of a degree of cold six below zero.

"By this simple apparatus, at any temperature of the day and at any season, the surgeon has thus in his hands a means for producing cold even six degrees below zero; and by directing the spray upon a half-inch test-tube containing water he can produce a column of ice in two minutes at most. Further, by this modification of Siegle's apparatus he can distribute fluids in the form of spray into any of the cavities of the body—into the bladder, for instance, by means of a spray catheter, or into the uterus by an uterine spray catheter.

"When the ether spray thus produced is directed upon the outer skin, the skin is rendered insensible within a minute; but the effects do not end here. So soon as the skin is divided the

ether begins to exert on the nervous filaments the double action of cold and etherization; so that the narcotism can be extended deeply to any desired extent. Pure rectified ether used in this manner is entirely negative; it causes no irritation, and may be applied to a deep wound, as I shall show, without any danger. I have applied it to the mucous membrane of my own eye, after first chilling the ball with the lid closed.

"I have now employed this mode of producing local anæsthesia in four cases on the human subject. The first case was the extraction of a tooth from a lady, the operation being performed by my friend and neighbor Dr. Sedgwick, on January 24th of this year. On the 29th of the same month, I used it again on the same lady for the extraction of three very difficult teeth, Dr. Sedgwick again operating. The results were as satisfactory as in the previous case, where the ice and salt ether apparatus was used.

"I have used the apparatus also in connection with my friend Mr. Adams, who had a case at the Great Northern Hospital of deep dissecting abscess in the thigh of a young woman. In the abscess there was a small opening, which just admitted the director. I first narcotized around this opening, and the director being introduced, Mr. Adams carried his bistoury nearly an inch deep and one inch in the line of the director. I then narcotized the deep-seated parts, and enabled him to cut for another inch and a-half in the same direction. The director was then placed in the upper line of the abscess, the process was repeated, and the incision was carried two and a-half inches in that direction. The patient was entirely unconscious of pain, and after narcotising the whole of the deep surface, Mr. Adams inserted his fingers and cleared out the wound without creating the slightest evidence of pain.

"Afterwards, in the case of a lacerated wound, six inches long, in the arm of a boy, who had been injured with machinery, I narcotized while six sutures were introduced by Mr. Adams. The first needle was carried through without the anæsthetic, and caused expression of acute pain; the remaining eleven needles, after a few seconds' administration of the ether spray, were passed through painlessly. The twisting of the wire sutures gave no pain.

"These results are so interesting that I make no apology for bringing them at once before my medical brethren. I wish it to be distinctly understood that at the present moment I only introduce the method here described for the production of superficial local anæsthesia. It is, I believe, applicable to a

large number of minor operations, for which the more dangerous agent chloroform is now commonly employed—I mean such operations as tooth extraction, tying nævus, tying piles, incising carbuncles, opening abscesses, putting in sutures, removing small tumors, removing the toe-nail, dividing tendons, operating for fistula, removing cancer of the lip, and other similar minor operations which I need not mention. The process may also be applied to reduce local inflammation.

“In course of time, and guided by experience and the advancement of science, we may, however, expect more. If an anæsthetic fluid of negative qualities, as regards irritation of nerve, and which has a boiling point of 75° or 80° can be obtained from the hydrocarbon series, the deepest anæsthesia may be produced, and even a limb may be amputated by this method. It may also turn out that certain anæsthetics may be added to the ethereal solution with advantage, such as small quantities of chloroform, or some of the narcotic alkaloids, if they could be made soluble in ether. A solution of morphia and atropia combined, if they could be diffused through ether, which at present seems impossible, could thus be brought into action so as to cause deep insensibility. In operating on the extremities it would be good practice to stop the current of warm blood by making pressure above on the main artery.

“Reaction from the anæsthesia is in no degree painful, and hemorrhage is almost entirely controlled during the anæsthesia.

“One or two precautions are necessary. It is essential, in the first place, to use pure rectified ether; methylated ether causes irritation, and chloroform, unless largely diluted with ether—say one part in eight—does the same.

The *modus operandi* of this process is exceedingly simple. It acts at first merely by extracting force, and afterwards, when the nervous filaments are exposed, by preventing the conveyance of force through them. To be plain, sensation means the conveyance of force or motion from the extreme parts to the brain. The motion is communicated by the blood in the form of heat: it is communicated to the nervous filaments, and by them is conveyed to the sensorium. This is passive sensibility. When we irritate a nervous fibre, as by a cut, we communicate more motion rapidly along that fibre and cause pain. This is active or exalted sensibility. To remove sensibility, therefore, we must adopt one of three processes: we must remove or render inert the sensorium; we must stop the evolution of force generally by arresting oxidation of blood; or we must rob the body locally of its force beyond that with which it is constantly being

renewed. We see the first of these processes in action in cases of pressure on the brain, as from injury or effusion of blood; we see the second whenever we produce general anæsthesia by charging the blood we chloroform or other analogous anæsthetic; and we see the third when, by means of extreme cold, we rob the local part of the force that has been brought to it by the blood.

The problem of local anæsthesia will consequently be quite solved when by a rapid process we can exhaust the natural force of a part as fast as such force is evolved in the local structure; and especially when with this we can combine the action of a substance which for the moment controls, as by compression, the conducting power of nerve matter. These two latter objects are to a large extent carried out by the method I have described above.—*London Medical Times and Gazette*, Feb. 3, 1866.

REMARKS CONCERNING SOME OF THE DISEASES PREVAILING AMONG THE FREEDPEOPLE IN THE DISTRICT OF COLUMBIA.

(BUREAU REFUGEES, FREEDMEN, ABANDONED LANDS.)

By ROBERT REYBURN, Surgeon, U.S. Vols.

The appended Report, which gives the results of the treatment of seven thousand nine hundred and forty-nine (7,949) cases of sick and wounded freedmen, who were under medical treatment in District of Columbia, Bureau of Refugees, Freedmen, and Abandoned Lands, from June 1, 1865, to December 31, 1865, has developed some interesting facts relative to the diseases prevalent among them, to which we desire to call the attention of the medical profession.

This report does not embrace *all* who were under treatment during the above months, but only those cases that were recorded and the results known.

This District Bureau of R. F. and A. L. embraces the city of Washington and the District of Columbia, properly so-called, the three counties of Alexandria, Fairfax, and London, Va., and a part of St. Mary's Co., Md., together with a general supervision of freedmen's affairs in the whole State of Maryland. The total number of freedpeople who are more immediately under the charge of the Medical Department of this district, is, from a census taken by order of the Bureau, and which is now

nearly completed, about fifty thousand; of these somewhat over fifty-two per cent. are full blood Africans, and the remaining forty-eight per cent belong to the mixed races.

The next and last class of diseases to which we will here advert is the tubercular; this includes consumption, what is usually denominated scrofula, and all the other varied forms in which the tubercular diathesis manifests itself.

Out of the total number, as above stated, three hundred and forty-six deaths are recorded, being about forty-three per thousand of those under treatment. This mortality is larger than exists at the present time in this district, and arises from the fact that the greater number of these cases were treated in hospital, and as only the more severe class of cases are sent to hospital, the mortality is larger than the average mortality of the cases treated in hospital and at their homes. Our mortality has been for the last three months about thirty-three per thousand of the number of the cases under treatment, and is now diminishing rather than increasing in amount.

The first and most fatal class of cases (although not the most numerous) in the report is that of typhoid fever. The number of cases of this disease was one hundred and sixteen, and the number of deaths was forty-nine, or nearly forty-one per cent of the number of cases treated. The *post mortem* examinations made in the fatal cases presented the usual abdominal lesions characteristic of typhoid fever, and the only point of difference observable was that the pulmonary and cerebral inflammations which so frequently complicate this disease, and add to its dangers, were found to present a more asthenic type, and consequently were found to be more dangerous in their results than is commonly the case with typhoid fever occurring among whites. The pneumonia which we find so often in cases of typhoid fever occurring in the Caucasian race, in the negro becomes pleuro-pneumonia of a low grade, and is generally accompanied with a large amount of serous or sero-sanguineous fluid, which, after death, is found filling the cavities of the pleuræ. In fact, as a rule, inflammations of the serous membranes seem to be much more frequent and dangerous among negroes than whites, and it is rarely we have examined a negro cadaver which did not present evidences of recent serous inflammations in either the thorax, abdomen, or calvarium. The same condition above mentioned has been found by other observers, and we have been informed by Dr. Ira Russell (late Brevet Lieut-Col. and Surgeon, U.S. Vols.) that he has hardly ever opened a negro cadaver in which there was not a large

amount of serous exudation. The observations of Dr. Russell on this point are deserving of especial weight on account of his having made the diseases and pathology of the negro race a specialty, and from his having assisted in making a large number of *post mortems* of freedpeople, while on duty in the West during the war. It may, however, be objected that in some of the above cases the effusion may have been *post mortem*, but we feel convinced that such was not the case, for the following reasons, *viz.*:—

1st. In many of these cases, percussion revealed the existence of the effusion during life; and, secondly, the amount of effusion was generally so great as to entirely preclude the idea of accounting for it by any mechanical transudation of the serum of the blood through the walls of the bloodvessels after death.

The next class of diseases worthy of notice, is that comprising the various forms of remittent and intermittent fevers. The total number of cases belonging to this class was two thousand seven hundred and seventy-six, or about thirty-five per cent of the total under treatment. This significant fact is, we believe, a sufficient answer to, and refutation of, the statement so often reiterated in our text-books, that the negro race are not subject to, and do not suffer from, malarious diseases.

Now, it may be that in Africa and the West Indies they do not suffer to the same extent that unacclimated whites do, but they certainly are not exempt from these diseases in this country; and, as far as our own opinion goes, we are strongly inclined to the belief that this so-called exemption has no foundation in fact, and is unworthy of credence.

In order to show that the large number of cases of intermittent and remittent fevers occurring among the freedpeople of this district is not owing to the influence of temporary or local causes, we are permitted, through the courtesy of Surgeon C. W. Hornor, U.S. Vols., Chief Medical Officer of Bureau Refugees, Freedmen, and Abandoned Lands, to give a few extracts from the official reports received from other districts of this Bureau, which will, we think, confirm and strengthen our assertions.

The official monthly report for September, 1865, of the Surgeon-in-Chief of the District of South Carolina (Bureau R. F. and A. L.) for the cities of Charlestown, Beaufort, and Combahee Ferry, and St. Helena Island, is now before us, and from it we extract the following:—

“The total number of sick freedpeople under treatment dur-

ing the month was one thousand and ninety-six, and the number of cases of the above-mentioned diseases was three hundred and ninety-seven, or about forty per cent of the total under treatment."

From a like official report for October, 1865, from the District of Virginia, Bureau R. F. and A. L., for the cities of Yorktown, Petersburg, Hampton, and Eastville, we find the following figures, *viz*:—

"The total number of sick freedmen under treatment during the month, was seven hundred and eighty-eight, and the number of cases of malarious diseases was four hundred and forty-one, or nearly fifty-six per cent of the total number under treatment."

From a similar report for the month of October, 1865, from the District of Georgia, Bureau R. F. and A. L., and for the cities of Macon, Savannah, and Augusta, we extract the following:—

"The number of sick freedmen under treatment during the month was five hundred and eleven, and the number of cases of the above diseases was one hundred and sixty-seven, or nearly thirty-three per cent of the total number under treatment."

We might continue to make extracts similar to the above to an indefinite extent, but we think it to be unnecessary, as all the reports we have seen, and we have consulted a large number with especial reference to this point, give uniformly the same result.

The total number of cases belonging to this class was two hundred and ninety, or nearly four per cent. of the total number of cases treated. This result is somewhat striking, and is diametrically at variance with the extraordinary statements which have been made by some of our medical authors and teachers, and which are to the effect that scrofula (in some form) is almost universally prevalent among the negroes and mulattoes in northern latitudes.

Now, is it undoubtedly true that when the negroes and mixed races are exposed for a lengthened period to the combined evil influences of improper nourishment, insufficient clothing, impure air, and uncleanness, that they are the victims of the various forms of scrofulous disease; but where well fed and clothed, and subjected to favorable hygienic influences, we are fully persuaded that such is not the case; and we believe that the statements above referred to are entirely mistaken and erroneous. As a proof of this we may cite the fact, that the same causes which produce and perpetuate scrofula among the colored

people, may be seen (to a limited extent) in operation among the poorer classes of white people in many of the larger cities of the Union, and produce among them precisely similar results; in other words, we believe that scrofula is nothing more than the effect produced upon the human system by unfavorable hygienic influences, and any of the races of men will suffer from it in exact proportion as they are subjected to these deleterious conditions.

In this District Bureau of R. F. and A. L. there are now three hospitals open, and eleven physicians employed by the Bureau, who attend them both at the hospitals and at their homes. The number of patients under treatment during each month ranged from eighteen hundred to two thousand for some months past, and if scrofula occurred as frequently among them as has been represented, we think we would have had fair opportunities for observing it. There are many other points of interest connected with the diseases of the freedpeople, on which we might dwell, but the amount of space we have allotted to ourselves in this hasty sketch will not permit us to do so at this time.

Book Notices.

A MANUAL OF THE PRINCIPLES OF SURGERY, BASED ON PATHOLOGY, FOR STUDENTS. By WILLIAM CANNIFF, Licentiate of the Medical Board of Upper Canada; M.D. of the University of New York; M.R.C.S. of England, etc., etc. Philadelphia: LINDSAY & BLAKISTON. 1866.

This is a well-executed octavo volume of 402 pages. As its title and size indicate, it is a manual of surgical pathology, presenting a fair summary of the surgical doctrines of the present time. After the preliminary chapter, on *Nutrition*, the contents of the work are included in five divisions:—

- 1st. Inflammation, and diseases arising out of inflammation.
- 2d. The Healing Process, and diseases of the healing process.
- 3d. External Injuries—Contusions and Wounds.
- 4th. Diseases of Certain Tissues, Bones, Joints, (including fractures and dislocations,) Arteries, and Veins.
- 5th. Morbid Growths.

We have not had time to give the work that full reading

which is necessary to enable us to speak critically of its merits, but will endeavor to recur to it at a future time.

REFLEX PARALYSIS: ITS PATHOLOGICAL ANATOMY AND RELATIONS TO THE SYMPATHETIC NERVOUS SYSTEM. By M. GONZALES ECHEVERRIA, M.D., Physician to the Charity Hospital, New York; formerly Assistant-Physician to the National Hospital for the Paralyzed and Epileptic, of London, etc. BAILLIERE & BROTHERS, New York. 1866.

This is an excellent monograph of 80 pages. The greater part of it originally appeared in a series of articles in the *New York Medical Journal*.

RECENT ADVANCES IN OPHTHALMIC SCIENCE. The Boylston Prize Essay for 1865. By HENRY W. WILLIAMS, M.D., Ophthalmic Surgeon to the City Hospital, Boston; University Lecturer on Ophthalmic Surgery, in Harvard University; etc., etc. TICKNOR & FIELDS. Boston. 1866.

This is an elegantly published volume of 166 pages. The title sufficiently indicates the interesting and important nature of its contents; while the reputation of its author and the award of the prize committee are a sufficient guarantee that the topics are well presented.

ASIATIC CHOLERA: ITS ORIGIN AND SPREAD IN ASIA, AFRICA, AND EUROPE; INTRODUCTION INTO AMERICA THROUGH CANADA; REMOTE AND PROXIMATE CAUSES, SYMPTOMS, AND PATHOLOGY, AND THE VARIOUS MODES OF TREATMENT ANALYZED. By R. NELSON, M.D., Health Commissioner during the first two invasions, 1832-4; President of the Medical Board for the District of Montreal. W. A. TOWNSEND, Publisher, New York. 1866.

This is a duodecimo volume of 206 pages. Its copious title page sufficiently indicates its contents. Those who wish to accumulate all the current literature on the subject of cholera will procure the present work. But we cannot approve of the author's views, either in relation to the pathology or treatment of the disease of which he treats.

ASIATIC CHOLERA. By F. A. BURRELL, M.D. Wm. Wood & Co., 61 Walker Street, New York. 1866.

This is a duodecimo of 155 pages, neatly printed, and contains a summary of the prevalent doctrines relating to the communicability, symptoms, and treatment of cholera. We

have failed to find in it any substantial additions to the stock of knowledge previously accessible to the profession.

DIARRHŒA AND CHOLERA: THEIR ORIGIN, PROXIMATE CAUSE AND CURE, THROUGH THE AGENCY OF THE NERVOUS SYSTEM, BY MEANS OF ICE. By JOHN CHAPMAN, M.D., M.R.C.P., M.R.C.S. J. B. LIPPINCOTT & Co., Philadelphia. 1866.

This is a pamphlet of 57 pages, devoted to the advocacy of ice bags to the spine, as the leading remedial agent in the treatment of cholera.

Editorial.

CHICAGO MEDICAL COLLEGE.—We have received the Eighth Annual Announcement of this institution, and take pleasure in calling the attention of our readers to it. It gives a plain statement of the organization of the college; its course and plan of instruction; its clinical advantages; terms for graduation; list of students in attendance the preceding year; and the number of students and graduates in each year since its organization.

Some changes have taken place in the faculty since the last annual announcement. Prof. H. A. JOHNSON, one of the founders of the college, who had most ably filled, in succession, the Chairs of Physiology and Histology, and of General Pathology and Public Hygiene, has been constrained, by continued ill-health, to resign his position as an active teacher in the college. We regret this, because Prof. JOHNSON was one of the most thorough, eloquent, and instructive lecturers in our profession. Prof. HENRY WING has also resigned the Chair of Medical Jurisprudence. The Chair of Physiology and Histology, made vacant by the resignation of Prof. JOHNSON, has been filled by the appointment of Dr. JOHN M. WOODWORTH, of this city, now on a visit in Europe. The Chair of Medical Jurisprudence has been filled by the appointment of Dr. R. J. PATTERSON, of this city, but extensively known throughout the North-west from his connection with institutions for the insane.

Dr. PATTERSON'S attainments and previous professional career have eminently qualified him for his present position.

The next regular lecture term commences on the first Monday in October, and continues until the first Tuesday in March, following.

There are three things connected with the Chicago Medical College, to which the attention of the profession is specially directed:—First, its regular annual lecture term is five full months, with a supplementary recitation and clinical term of four months. Second, its clinical facilities and requirements; not only making hospital clinical instruction in medicine and surgery a prominent part of its daily instruction, but making attendance thereon a positive condition for graduation. In this department, the Chicago Medical College is as intimately connected with the Mercy Hospital as the Bellevue College, in New York, is with the Bellevue Hospital. Third, its increased number of professorships, with the division of the several branches into two groups, designated as junior and senior departments or courses, by which the students are arranged into junior and senior classes, and are thus enabled, each term, to confine their attention to a limited number of topics, and have their successive courses progressive instead of merely repetitional. In the practical adoption of this important principle, so long familiar and regarded as essential in all other departments of education, this college has stood alone among the medical schools of this country for the past six years. It is yet the only medical college in the country in which the student attending his first course is required to attend thoroughly to the more elementary branches of medical science, and to be examined on the same before advancing to his second or senior course. The principle lies at the foundation of all important improvements in the system of medical college instruction in our country. We are glad to see that it is, finally, attracting some attention in influential quarters. In a recent number of the *Medical Record*, of New York, the editor very properly and forcibly advocates the full adoption of this principle with a longer lecture term, by all the medical schools.

PROCEEDINGS OF THE ILLINOIS STATE MEDICAL SOCIETY.—

We have received letters from members of the Adams Co. Medical Society, complaining that the record of the proceedings of the recent meeting of the State Medical Society, as published in the July numbers of the medical journals of this city, is incorrect, so far as relates to the communication from that Society and the action of the State Society thereon.

According to these letters, the *record* should have said that a communication was received from the Adams County Medical Society, protesting against the propriety of admitting into the State Society delegates from the "so-called Quincy Medical Society;" that the same was referred to a committee; that the committee reported a resolution declaring that the said "so-called Quincy Medical Society" was not entitled to representation, on account of its being composed in part of members who had been previously expelled from the County Society; and that this resolution was adopted. We give the proposed correction of the *record* the same publicity as the *record* itself.

In regard to the publication of the proceedings and papers read at the late meeting of the State Society and referred to the Committee of Publication, as Secretary, we feel some doubts in regard to our duty in the matter. As the representative of the Committee of Publication and Permanent-Secretary of the Society, we sent a communication to the late annual meeting, making certain recommendations in regard to the future publication of the transactions. This was referred to a committee, consisting of three prominent members of the Society, who reported adversely on our recommendations, and, after considerable discussion, both the communication and the report of the committee were laid on the table and left there, without any definite action whatever.

CHICAGO MEDICAL SOCIETY.—Three or four of the recent weekly meetings of this Society have been occupied chiefly in discussing matters of ethics, and, consequently, have furnished less matter worthy of record than usual. At the meeting on the evening of the 29th of June, some interesting cases were

reported verbally by Drs. REID, ORRIN SMITH, and WANZER, which were discussed until a late hour. At the meeting on the evening of the 6th of July, a committee reported that Dr. JONATHAN W. BROOKS had been proved guilty of unprofessional conduct, in relation to other members of the profession, and he was expelled from the Society.

EUROPEAN MEDICAL NEWS.—This is the title of a new monthly medical periodical, that Dr. ROBERT STONE, of New Haven, Ct., proposes to publish, as soon as a sufficient number of subscribers can be pledged to justify the undertaking. The object of Dr. STONE is, not to publish an ordinary medical journal, but a faithful abstract, monthly, of the principal medical and surgical journals of *Continental Europe*. Its size will be not less than fifty pages per month, and its price five dollars a-year. The object is a good one, and we hope it will meet with abundant success.

SULPHITES IN MALARIAL FEVERS.

MOSCOW, IOWA, July 18, 1866.

PROF. N. S. DAVIS, M.D.:—

Dear Sir:—My attention being called to an article in the *American Journal of the Medical Sciences*, April No., 1866, on the remedial power of the Hypersulphite of Soda in intermittent and remittent fevers, and their analogous affections. The theory of the fermentation of the blood:—and knowing that the hypersulphite was a powerful anti-ferment, I was induced to give it a trial. Perhaps no country practitioner has used it more extensively than I, and, therefore, I only give my experience in the remedy. In the last month, I have treated over one hundred cases of simple intermittent and remittent fever with this remedy alone, and in no case has there been an exacerbation after taking the remedy a reasonable length of time. I give it in 15 gr. doses, in solution with water. I have not trusted to this remedy alone in pernicious or malignant types.

Yours truly,

W. H. BAXTER, M.D.

PHYSICIAN'S REPORT OF ST. LUKE'S HOSPITAL, FROM OCTOBER
18TH, 1865, TO MARCH 31ST, 1866.

Number of patients remaining Oct. 17th, 1865,-----	13
" " admitted from Oct. 18th, to March 31st,-----	55
Total treated,-----	68
Number discharged,-----	54
" of deaths,-----	3
" patients remaining April 1st,-----	11

SEX, NATIONALITY, AND RELIGIOUS DENOMINATION OF
THOSE TREATED.

Males,-----	39	Females,-----	29
Bohemia,-----	1	Norway,-----	1
Canada,-----	8	Nova Scotia,-----	1
England,-----	8	Sweden,-----	1
Germany,-----	5	United States,-----	21
Ireland,-----	19	Unknown,-----	3
Baptists,-----	3	Methodists,-----	3
Catholics, (Roman,)-----	27	None,-----	9
Episcopalians,-----	18	Presbyterians,-----	4
Lutherans,-----	2	Unknown,-----	2

CASES TREATED.

Abrasions of Scalp,-----	1	Fracture, Tibia,-----	1
Abscess, Popliteal,-----	1	" neck of Femur, Impacted,-----	1
Adhesions, Pleuritic,-----	1	" Tibia & Fibula, Compound,-----	1
Albuminuria,-----	1	Gastritis, Chronic,-----	1
Anæmia,-----	1	Hypertrophy of Heart,-----	1
Anthrax,-----	1	Inflammation of Cervix Uteri,-----	1
Bronchitis, Acute,-----	1	Lying-in Cases,-----	18
" Chronic,-----	1	Marasmus—Senilis, with Diarrhœa,-----	1
Cancer of Inguinal Glands, Scirrhus,-----	1	Periostitis of Foot, Traumatic,-----	1
" Pancreas, Encephaloid,-----	1	" Syphilitic,-----	1
Caries of Finger,-----	1	Phthisis,-----	2
Cerebro-Spinal Meningitis,-----	1	Pneumonia, Double,-----	1
Congestion, Renal,-----	1	Rheumatism, Acute,-----	3
Debility,-----	2	" Chronic,-----	1
Diarrhœa, Chronic,-----	3	Stricture, Rectal,-----	1
Dislocation of head of Humerus,-----	1	Ulcer, Varicose,-----	3
Dysmenorrhœa,-----	1	Varix,-----	2
Ecthyma,-----	1	Variola, transferred to pest-house,-----	1
Eczema,-----	1	Caries of Sternum, (eloped without treatment,)-----	1
Fever, Typhoid,-----	3		
" Intermittent,-----	2		

CAUSES OF DEATH.

Cerebro-Spinal Meningitis,-----	1
Fever, Typhoid,-----	1
Marasmus—Senilis, with Diarrhœa,-----	1
Total,-----	3

There have been three still-births. One, the result of the mother's falling a short time before admission. In the second case, craniotomy was performed, owing to the deformity of the mother and the unusually large size of the child. In the third case, the labor was complicated with puerperal convulsions. The child was delivered by turning. The mother made a good recovery.

JNO. E. OWENS, M.D., *Physician in charge.*

MORTALITY FOR THE MONTH OF JUNE.—The mortality report for the month of June, as compiled by the health-officer, is given below. The statistics show an increase of 126 deaths over the corresponding period of last year. The increase appears to be principally confined to accidents, consumption, convulsions, and those patients under the age of 5 years appear to have made up the greater percentage. There is no epidemic in the city, and no cases of small-pox have appeared for many months.

CAUSES OF DEATH.

Accidents,-----	12	Fever, Congestive,-----	3
Asthma,-----	1	Fever, Remittent,-----	4
Apoplexy,-----	2	Fever, Scarlet,-----	14
Abscess,-----	2	Fever, Typhoid,-----	13
Bronchitis,-----	1	Hemorrhage,-----	1
Cancer,-----	3	Hydrocephalus,-----	5
Childbed,-----	3	Inflammation of Brain,-----	7
Colds,-----	1	Inflammation of Bowels,-----	7
Congestion of Brain,-----	6	Inflammation of Lungs,-----	8
Congestion of Lungs,-----	3	Intemperance,-----	2
Cholera Infantum,-----	4	Lockjaw,-----	2
Consumption,-----	14	Marasmus,-----	2
Convulsions,-----	26	Measles,-----	18
Croup,-----	9	Meningitis,-----	1
Diarrhoea,-----	3	Old Age,-----	12
Diphtheria,-----	4	Paralysis,-----	1
Disease of Bowels,-----	1	Poisoning,-----	1
Disease of Heart,-----	5	Phthisis Pulmonalis,-----	5
Disease of Liver,-----	2	Stillborn,-----	15
Disease of Throat,-----	2	Scald,-----	1
Disease of Spine,-----	2	Suicide,-----	1
Disease of Brain,-----	4	Teething,-----	11
Disease of Lungs,-----	3	Tuberculosis,-----	3
Dropsy,-----	7	Tumor,-----	1
Drowned,-----	11	Whooping-Cough,-----	6
Dysentery,-----	6	Unknown,-----	41
Erysipelas,-----	2		
Fever, Childbed,-----	3	Total,-----	319

AGES OF THE DECEASED.—Under 5 years, 165; over 5 and under 10 years, 21; over 10 and under 20, 15; over 20 and under 30, 29; over 30 and under 40, 25; over 40 and under 50, 21; over 50 and under 60, 14; over 60 and under 70, 8; over 70 and under 80, 6; unknown, 15. Total, 319.

NATIVITIES,

Chicago,-----	157	Canada,-----	1	Poland,-----	1
Other States,-----	52	Ireland,-----	43	Unknown,-----	9
England,-----	5	Scotland,-----	5		
Germany,-----	39	Sweden,-----	4	Total,-----	319
Denmark,-----	1	Norway,-----	8		

DIVISIONS.

North,-----	94	South,-----	81	West,-----	131	Country,-----	5
Unknown,-----	1	Total,-----	319				

BIOGRAPHICAL DICTIONARY.—Dr. J. M. TONER, of Washington, D.C., is engaged in the preparation of a biographical dictionary of deceased American physicians. We think him eminently qualified for the performance of the task he has undertaken, and hope the profession in all parts of the country will communicate to him freely all such facts as he needs, and such patronage as will reward him for attempting to do justice to the dead.

PREVENTION OF CHOLERA.

At a recent meeting of the New York Academy of Medicine, the following preamble and resolutions were unanimously adopted.

Without regarding them as authoritatively settling any questions of a controversial character in relation to the etiology of cholera, we cheerfully give them a place in our columns, and ask for them a careful reading:—

PREAMBLE AND RESOLUTIONS.

Whereas, The New York Academy of Medicine has endeavored to promote among its own members, and throughout the medical profession, a spirit of exact and practical inquiry into the preventive and remedial treatment of epidemic cholera; therefore, be it

Resolved, That this Academy hereby expresses its confidence in the utility of general and specific hygienic measures as the best means of protection against the pestilential prevalence of cholera in any locality where it makes its appearance; and that the most thorough scavenging, cleansing, and disinfection are absolutely necessary means of averting this pestilence in the cities and populous towns of our country at this present time.

Resolved, That in the judgement of the Academy the medical profession throughout this country should, for all practical purposes, act and advise in accordance with the hypothesis (or the fact) that the cholera diarrhoea and "rice-water discharges" of cholera patients, are capable, in connection with well-known localizing conditions, of propagating the cholera poison; and that rigidly enforced precautions should be taken in every case of cholera to permanently disinfect or destroy those ejected fluids by means of active chemical agents; also that with the same object in view, the strictest cleanliness of person and

premises should be enforced upon all who have charge of the sick; also, that all privies, water-closets, and cess-pools should be kept thoroughly under the control of disinfectants.

Resolved, That we regard the nature and causes of cholera infection, so far as the sick or their discharges can propagate it, as being so susceptible of control that there should be no fear or hesitancy in the personal care of the sick and all that pertains to them.

Resolved, That immediate and thorough cleansing and disinfection of all persons, clothing, and things that have been exposed to the discharges or persons of the sick with cholera constitutes the chief end and object of any rational quarantine or external sanitary police regulation against cholera.

Resolved, That, for the purposes here mentioned, and external sanitary police is desirable in all great maritime and river towns, but that such sanitary regulations need not seriously embarrass commercial intercourse and the interests of trade.

Resolved, That the main source of protection against epidemic cholera at the present time is to be found in the vigilant and effective operation of sanitary measures, municipal, domestic, and personal.

Resolved, That the New York Academy of Medicine cordially invites the physicians of every city and village through our country to urge the immediate adoption of adequate measures of sanitary protection against the introduction and ravages of cholera, and that to this end we pledge our brethren and the public the hearty and continued coöperation of this Academy.

STEVENS TRIENNIAL PRIZE.—A Prize Fund of one thousand dollars has been established by Alexander H. Stevens, M.D., Ex-President of the College of Physicians and Surgeons, New York, for the improvement of Medical Literature, on the following plan:—

Each Prize to be awarded triennially is to consist of the interest yielded by the principal fund during the previous three years, and will amount to about two hundred dollars.

The administration of the Prize is intrusted to a commission, consisting of the President of the College of Physicians and Surgeons (*ex-officio*), the President of the Alumni Association (*ex-officio*), and the Professor of Physiology (*ex-officio*), in the same institution.

The following subjects have been selected, at the request of Dr. Stevens, for the first triennial Prize under this fund:—

1st. The best means of preventing death after surgical accidents.

2d. The history of improvements in the medical art, and the means by which they are attained.

The competing essays on either of the above subjects must be sent to the President of the College of Physicians and Surgeons, New York, on or before the first day of January, 1869. Each essay must be designated by a device or motto, and must be accompanied by a sealed envelope bearing the same device or motto, and containing the name of the author.

The envelope belonging to the successful essay will be opened and the name of the author announced at the annual commencement of the College in March, 1869.

This Prize is open for universal competition.

Edward Delafield, M.D., President of the College of Physicians and Surgeons.

Alfred C. Post, M.D., President of the Alumni Association of the College of Physicians and Surgeons.

J. C. Dalton, M.D., Professor of Physiology in the College of Physicians and Surgeons.

ANNUAL PRIZES OF THE IMPERIAL ACADEMY OF MEDICINE. —These were announced on the 12th December last. The Academy prize of 1000 *francs* was adjudged to Dr. Martin, its subject being Traumatic Paralysis. Baron Portal's prize of 1000 *francs*, "On the Specific Anatomical Characters, if there be any, of Cancer," was gained by M. Cornil. There were six competitors for Madame de Civrieux's prize of 1000 *francs*; the question being, The Relations between General Paralysis and Madness." M. Magnan took the prize. Capuron's prize of a like value, "The Pulse in the Puerperal State," was not adjudged. An encouragement, however, of 600 *francs* was given to M. Hemey, one of three competitors. Baron Barbier's impossible prize of 8000 *francs*, for a cure of incurable diseases, found seven candidates. A prize of 7000 *francs* was adjudged, as the nearest approach to the programme, to M. Chassaîgnac, as author of "Écrasement Linéaire." M. Amussat's prize of 2000 *francs* found four candidates, but no takers; but recompenses were given to two of them. Eight works were sent in for Godard's prize of 1000 *francs*; but the Academy gave only two recompenses.—*British Medical Journal*.

OBITUARY RECORD.—Died, in Boston, June 21, 1866, Reuben D. Mussey, aged eighty-six. Dr. Mussey was one of the most eminent Surgeons of New England, and was for many years Professor of Surgery in Dartmouth Medical College, in

his native State. About the year 1838 he removed to Cincinnati, Ohio, and was appointed Professor in the Miami Medical College, which he held until some ten years ago. He communicated a number of very valuable papers to the *American Journal of the Medical Sciences*, among others one on fractures of the neck of the thigh-bone within the capsular ligament.

At Jaffa, whither he had gone on one of those missions of love and mercy in which he delighted, on the 5th of April, Thomas Hodgkin, aged 68. Dr. H. was a physician of great talent, was a fine scholar, an accomplished linguist, and a warm-hearted philanthropist.

WHY NOT? A BOOK FOR EVERY WOMAN.

The Prize Essay of the American Medical Association.

By Dr. H. R. STORER, of Boston,

Surgeon to the New England Hospital for Women, and Professor of Obstetrics and the Diseases of Women in Berkshire Medical College.

At the New York meeting of the "American Medical Association," it was decided to issue "a short and comprehensive tract for circulation among females, for the purpose of enlightening them upon the criminality and physical evils of forced abortions." By special vote of the Association, Prof. Storer's Essay has been recommended to the Profession, as calculated to effect much good, if widely circulated.

Price, cloth, \$1.00; paper, 50 cts. A liberal discount made to physicians sending large orders with a view to distribution among their patients.

Sent by mail, post-paid, on receipt of price.

LEE & SHEPARD, Publishers,
149 Washington St., Boston,

no81t

PRIZE ESSAY.

The Indiana State Medical Society, through its Committee on Prize Essays, offers a premium of the value of ONE HUNDRED DOLLARS to the Physician, resident within the State, who shall present the best, and an acceptable, dissertation upon any subject of professional interest.

Competitors for the prize must send their essays to JAS. F. HIBBERD, M.D., Chairman of the Committee, Richmond, Ind., free of all expense, on or before the 1st of April, 1867. Each essay must be accompanied by a sealed packet, containing the author's name and address. On the sealed packet must be inscribed some device, motto, or sentence, and the same device, motto, or sentence must be inscribed on the essay.

The successful dissertation will be the exclusive property of the State Medical Society. The unsuccessful dissertations will be left with the Secretary of the Society, and may be obtained by their respective authors at any time within a year.

JAMES F. HIBBERD, Richmond, Ind., H. P. AYRES, Fort Wayne, Ind., WM. B. FLETCHER, Indianapolis, Ind.	}	Com. on Prize Essay, Ind. State Med. Soc.
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June, 1866.

BELLEVUE HOSPITAL MEDICAL COLLEGE, CITY OF NEW YORK. SESSIONS FOR 1866-'67.

THE Faculty take pleasure in referring to the cumulative evidence afforded by the success of this College, in behalf of the importance of the union of clinical and didactic teaching. The class in attendance during the Session of 1865-6 numbered 470, the number of graduates being 172. The new building within the hospital grounds affords ample accommodations.

The Faculty have instituted a Summer Session, beginning on the first of April 1867, and ending in the following July. This Session will embrace didactic and clinical lectures. HENRY D. NOYES, M.D., has been appointed Professor of Ophthalmology in the Summer Faculty; J. LEWIS SMITH, M.D., Lecturer on Morbid Anatomy, and FOSTER SWIFT, M.D., Lecturer on Diseases of the Skin. Professor W. H. VAN BUREN, M.D., has been appointed to a newly created Professorship of the Diseases of the Genito-Urinary System. Professors DOREMUS, ELLIOT, and FLINT, Jr., will, in addition to the foregoing, take part in the Summer Session. A further account of this Session, with the fees and regulations, is contained in the annual circular for 1866-7.

The usual preliminary Autumnal Session will commence on Wednesday, Sept. 12, 1866, and continue four weeks. Instruction during this term will, as hitherto, consist of didactic lectures on special subjects, and daily clinical lectures. The lectures in this term are given exclusively by members of the Faculties. The regular Winter Session will commence on Wednesday, October 10, 1866, and end about the first of March, 1867.

FACULTY OF THE COLLEGE:

ISAAC E. TAYLOR, M.D., President.

AUSTIN FLINT, Jr., M.D., Secretary.

JAMES R. WOOD, M.D., Professor of Operative Surgery and Surgical Pathology.
FRANK H. HAMILTON, M.D., Professor of Military Surgery, Fractures and Dislocations, and the Principles of Surgery.

LEWIS A. SAYRE, M.D., Professor of Orthopedic Surgery.

ALEXANDER B. MOTT, M.D., Professor of Surgical Anatomy.

W. H. VAN BUREN, M.D., Professor of Diseases of the Genito-Urinary System.

ISAAC E. TAYLOR, M.D.,

GEORGE T. ELLIOT, M.D.,

FORDYCE BARKER, M.D.,

} Professors of Obstetrics and Diseases of Women and Children.

BENJAMIN W. MCCREADY, M.D., Professor of Materia Medica and Therapeutics.

STEPHEN SMITH, M.D., Professor of Descriptive and Comparative Anatomy.

AUSTIN FLINT, M.D., Professor of the Principles and Practice of Medicine.

R. OGDEN DOREMUS, M.D., Professor of Chemistry and Toxicology.

AUSTIN FLINT, Jr., M.D., Professor of Physiology and Microscopy.

N. R. MOSELY, M.D., Demonstrator of Anatomy.

J. W. SOUTHACK, M.D., Assistant Demonstrator of Anatomy and Prosecutor to the Chair of Operative Surgery and Surgical Pathology.

A. W. WILKINSON, M.D., Assistant to Chair of Chemistry and Toxicology.

HENRY G. PIFFARD, M.D., Assistant to Chair of Principles and Practice of Medicine.

LUCIEN DAMAINVILLE, M.D., Assistant to Chair of Military Surgery, etc., etc.

Fees for tickets to all the lectures during the Autumnal and the Regular Winter Session* \$140 00

Tickets for any of the several departments may be taken out separately.

Matriculation Fee..... 5 00

Demonstrator's Ticket..... 10 00

Graduation Fee 30 00

Students who have attended two full courses in other accredited schools receive all the tickets for \$70, exclusive of the Matriculation Fee. Students who have attended two full courses in this College, or after one full course in this College, having previously attended a full course in some other accredited schools, are required to matriculate only. Graduates of other accredited schools, after three years, dating from the time of graduation to the end of the term, are required to matriculate only; prior to three years they receive a general ticket for \$70.

Payment of Fees is invariably required at the commencement of the Session. There are no exceptions to this rule.

Students on arriving in the city are requested to report at once at Bellevue Hospital, situated on the East River, between 26th and 28th Streets, and inquire for the Janitor of the College, who will take pains to aid them in securing comfortable accommodations without delay. Entrance to the Hospital is on 26th Street.

For the annual Circular giving further information, address the Secretary of the Faculty, Prof. AUSTIN FLINT, Jr., Bellevue Hospital Medical College.

* The fees in this College are raised in common with the Colleges of New York and Brooklyn, Philadelphia and Boston.